

THE
SOUTHERN AGRICULTURIST.

APRIL, 1831.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I.—*On Planting Cotton ;* by THOMAS PARKER.

“ Rocky Grove, Abbeville, 11th February, 1831.

Dear Sir,—The manner in which cotton was generally planted in the Calhoun settlement, Abbeville District, until within six years past, was as follows :—The land being first well broken up with the plough ; furrows were then laid off across the ploughing with a gofer* plough, at from three to five feet apart, according to the strength of the land. Upon these furrows ridges were formed, by running on each side of them with a shovel or mould-board plough. Drills were then made in the ridges, by opening them with a gofer plough, and cotton seed sowed therein, in quantity, from two to four bushels per acre. The seed was then covered with a light wooded toothed harrow, or a board drawn along the ridge by a horse. By this manner of planting, the ploughman passed along each drill five times before the planting was completed.

For the last six years the following manner of planting has been generally adopted here, in decided preference to the above. The land being broken up and furrowed as before mentioned, the cotton-seed is sowed in those furrows, in quantities as above. A bold ridge is then thrown on the seed, by running on each side with a shovel or mould-board plough. Through this ridge the

*A gofer is a narrow shovel plough, from 5 to 6 inches wide.

seed is not expected to come up, nor indeed is it desirable that it should. After the seed has been in the ground a sufficient time to allow it to sprout and send its root down an inch or an inch and a half, the shovel (which is secured to the stock of the plough by a three-quarter inch screw passing through a hole made in them, and fastened behind by a tap,) is then taken off, and in its place, is fastened to the stock, in the same manner, a board about eighteen inches long, and ten inches or a foot wide ; the length of the board being placed across the heel of the plough. With this implement, drawn by a horse, the ridge which was thrown on the seed is scraped off nearly to a level with the rest of the field, when the planting is completed, the ploughman having passed along each drill only four times instead of five as in the former method. In performing this last operation, a good deal of the sprouted seed is destroyed, the labourer being directed to scrape off the ridge sufficiently to uncover occasionally some of the seed ; but there is still left more than seed enough for a stand. If the ridge is not scraped off too soon, and the scraping is properly done, the seed, which has already sprouted, will come up in from one to three days, sufficiently thick for a stand, according to the warmth of the weather and the degree of moisture in the ground ; but if scraped off too early, or not scraped off sufficiently deep, the seed will be longer in appearing above ground, especially if the weather is cool. The mode of ascertaining the proper time for scraping the ridge off, is by searching the ridges in a few places, to ascertain to what degree the seed has sprouted. Persons unaccustomed to this manner of planting, will be apt, from apprehension of injury, to scrape the ridges off too early and too lightly, and thus, in some measure, lose the advantage of giving the cotton a start over the grass, which this manner of planting so eminently does.

The advantages of planting in this manner over the former are four-fold. First, one-fifth of the ploughman's labour is saved at the time of planting ; secondly, the seed will come up earlier, and with greater certainty, should there be a drought at the time of planting, or should hard beating rains occur before the seed is up ; thirdly, the cotton has an important start over the grass, and from having the earth so recently stirred about it, is less liable to die when young, (as much of it frequently does before it has received the first working with the hoe,) and grows off

more kindly ; which will enable a hand, fourthly, to work over more ground with the hoe at the first working. When the ridge is scraped off, the work is so very light to the horse, that he will go over with great ease, from seven to ten acres in a day. Two years ago, on the morning I intended to scrape off a twelve-acre field, it rained ; the happy consequence of which was, that the sprouting of the seed being further advanced than I was willing to risk, the cotton was beautifully up in the drill, and sufficiently so for a stand before sun-down, on the same day on which the ridges had been scraped off before breakfast ; thus giving the cotton a decided start over the grass. Fear need not be entertained, that the horse, by trampling on the ridge when scraping off, will destroy the sprouted cotton seed ; experience has proved the contrary. Where the land is low, so as to require bedding or ridging up, this manner of planting should not be attempted ; but on high land, from five years experience, I give it a decided preference to any other mode I have seen tried, and so do most of my neighbours ; one or two, however, adhere to the former method. It sometimes happens, in the stiff soils of the upper parts of South-Carolina, after hard beating rains, that the land bakes, and forms a crust so hard as to prevent the seed when covered with the harrow or board, from coming up. In such a case, this crust is broken either by a light harrow, drawn by a horse over the drills, or by raking or hoeing on both sides of the drills, to enable the seed to come up. But neither of these plans will always succeed, and planters occasionally, from such cause, have to plant over a part of their crop. Now, this occasional risk and loss of labour, cannot occur when the manner of planting above recommended is adopted, unless the planter scrapes off too early ; which if he does, it is his own fault.

But, as a set off against this occasional advantage, it has been objected, there is a possibility that on the day the ridge should be scraped off, a spell of wet weather might commence, and continue so long as to occasion the seed to rot before the scraping off can be performed. But this kind of weather seldom occurs in April, when cotton is generally planted. However, just at this supposed critical moment, a spell of two or three days of wet weather did occur in 1826, and I felt some anxiety about a part of my crop, especially as the seed which was lightest covered, were, in a great many places, up before I could scrape off.

Nevertheless, as soon as the weather would permit, I scraped off, although the ground was much too wet to be ploughed, and although I necessarily destroyed a great deal of the sprouted seed, yet I never had a more satisfactory stand of cotton, whilst in a small low part of the field, where it continued for some days too boggy to scrape off, the seed, (the quantity sowed, three to four bushels per acre,) sprouting together, forced their way through the ridge plentifully for a stand, and to spare. The fact is, seed, if prevented from weight of earth from coming up, will yet remain many days in a sprouted state, before it will rot. I do not, therefore, consider this objection a serious one;—no such loss has yet occurred. It is also objected, that a careless labourer may scrape off so deep, as to destroy or remove too much of the seed. This is certainly possible, but as it has not happened in this neighbourhood during the six years we have been so planting, (nor elsewhere, that I know of) the objection is more specious than sound. The advantage given by the scraping-off plan to the cotton, when judiciously performed, as to time, is considered by those who have tried it, as being a benefit but little short of a working.

THOMAS PARKER.

ART. II.—*On the Culture of Corn, Sweet Potatoes and Oats, and the Management of Cattle; by A RICE PLANTER.*

“Cooper River, January 25th, 1831.

Dear Sir,—In compliance with your request, that I should give you some account of the manner in which I cultivate my provision crop, and the management of my cattle, I will now endeavour to do so, by merely giving you a plain matter-of-fact statement of what has been my practice for ten or twelve years past, and the result of it, and if you should be of opinion that any portion is of sufficient importance to occupy a place in your useful journal, you are at liberty to select any part you please.

I plant provisions altogether upon high land, it is, however, all contiguous to my rice land; a portion of it is a red or yellow clay, but the greater part a light sandy soil, *all* of it was exceedingly poor and sterile, when I turned my attention to it. It was impossible at that time, to get from it more than six or eight bushels of corn per acre, potatoes, peas and oats in proportion. The previous plan had been to change the fields every two or three years, and little or no manure was used. I inclosed only so much as was necessary to be planted—say an acre and a half to each hand. As the treatment of the clay differs so much from the sandy land, I will give you both in detail, doubting exceedingly, whether your patience will be sufficient to enable you to find the end of the chapter.

Early in the winter, the rice stubble was hoed off in the fields adjoining the clay land, and was carried out and spread in proportion of about an acre and a half of stubble to an acre of clay land. The plough (Davis') then turned it in deep. In March, all the winnowing from the rice crop was spread over the same field, and the plough again turned it in, but very shallow. In June, this field was planted in slips upon large beds, five feet apart, the season was favourable, and the yield was far beyond my expectation. The same course was adopted the second year, with the exception that the winnowing was put upon the field the first of February, and immediately oats were planted in drills, fifteen inches apart, and two bushels of seed to the acre—a good crop was produced. In June, the oat stubble was listed in, and slips planted as before, the production was far better than the year preceding, and the quantity nearly double what it was before this mode was adopted. I have continued the same method ever since, and the land which was at first considered not worth planting, is now an excellent soil, yielding abundant crops, and from being stiff and unmanageable, is now completely loose and arable. Not having the means of saving my rice chaff, I have not, to any extent, used it as manure, but I am satisfied that, for *clay* land, it would be preferable to the winnowing. I must here observe, that two acres of this field have been regularly planted in guineacorn until last year, when they were planted in slips, and there was scarcely any difference in their production and that of any other part of the field. The two acres planted in guineacorn were never manured with stubble or winnowing *after*

the first year. The corn was planted in April, pretty thick, on beds five feet apart, and in the fall, before a frost, the stalks were cut down, and listed in the alleys, five or six inches deep. I have mentioned this circumstance that you may see how valuable the guinea-corn stalks and blades are as manure on *clay* lands.

Upon the sandy land, I plant corn, root-potatoes, peas, and oats. The old plan was, to plant the corn in hills, five feet apart each way, and two stalks left to each hill; the plough was used in both directions, or rather, it was ploughed and cross ploughed. The corn stalks were burnt in winter, and the only manure used was what came from the stable, and that was put into the corn hills before planting, but it was never enough to go over half the field.

For ten years, my mode has been the following:—Early in the winter, the corn stalks are pulled up, and put in the alleys, the pea-vines, grass, &c. are all listed in—a portion of rice straw is carried out daily, and spread over the corn land, until it has been done all over the field—the cattle are allowed to feed on it every day. In the spring, the cattle are removed, and the well-rotted manure from the stable and farm-pen is now carted out, and an equal quantity put to each task, or half acre, in three or four heaps, for the convenience of putting it to the corn, when top-dressed. The straw left by the cattle, is bedded in upon the list; the beds are made wide and flat, but not high. I seldom plant corn before the first of May; the beds are five feet apart, and the corn planted two feet and a half apart on the bed; the plough is used as soon as the corn is all well up, putting four or five furrows. Stirring the ground at this time is very beneficial in keeping off the cut-worm. When the corn has four or five leaves, it is thinned, and only one stalk left to a hole; at this time the rotten manure is put around the corn, and touching it; the earth is hauled up with the hoe, making a pretty large bed. The plough is frequently used, making as many furrows as will break up the alleys thoroughly—peas are planted on the middle of the bed, between the corn, as soon as it is large enough. Pursuing this plan, I generally average from eighteen to twenty bushels to the acre, and an abundant crop of peas; no great yield to be sure, but certainly triple the production made by the old plan.

Root-potatoes and oats.—I keep two lots, about twelve acres each, which are alternately planted, in root-potatoes

and oats:—for instance, the lot on which potatoes were planted in 1820, was, in January, 1821, planted in oats, in the usual manner—the oats are cut in May, before they are quite ripe, to prevent their shelling. These oats are not threshed, but housed in the straw, to be used for horses and mules, after they have been cut up in one of Messrs Sinclair & Moore's straw cutters, (certainly the best I have ever seen,)—as soon as the oats are taken off, the stubble is ploughed in, and the cattle are penned every night upon it, moving the pens every two or three weeks, taking care to turn in the manure with the plough whenever the pen is moved. In this way the whole lot is well manured, before the cattle are put into the farm-pen in winter. This lot remains fallow, till the month of March, when it is broken up by the plough. About the first of April, the beds are made up, in *wet weather*; they are five feet apart, very large, and pretty high; the potatoes are immediately planted, *while the ground is wet*; the seed is all planted whole, and about ten inches apart. To make a full crop of root-potatoes, it is indispensably necessary to keep the field perfectly clean from grass—the plough and hoe are therefore frequently used,—no crop suffers so much from grass as the potatoe. I never permit more vines to be cut than what is absolutely necessary to plant the slip crop; the production will be much lessened if the vines are cut, for as long as you continue to cut the vines, the growth will be above ground instead of below. Many persons cut the vines all summer to feed hogs and other stock, whereby the potatoes are much injured. In this manner both lots are kept in good condition, and generally yield very full crops of potatoes and oats alternately.

Respecting the management of my cattle, I must say, that until within a few years, they have been very much neglected, but by attending to the following system, I have found the stock increase very much, both in number and size, and I am satisfied, that notwithstanding the range about me is very inferior, they will be very profitable within a few years, independently of their great value in manuring the fields.

Early in the fall, I select six cows, which are regularly stalled, and well fed until May; for these I have a rye lot upon which they graze a few hours every day. They afford a sufficient supply of milk and butter for a large family,

while the calves become very fine. As stated before, the stock of cattle feed upon the straw or the corn-fields all the winter; they are, however, put into the farm-pen at night. From May till November, they are penned every night upon the oat land. The calves are parted only at night, and go all day into the woods with the cows; it is important to have the cows milked, and turned into the woods *early* in the morning. To milk late, part the calves during the day, and keep them in a *poll*, hot pasture, is the most effectual mode to injure stock. The calves will not feed when apart from the cows, and the cows hang about the pasture fence and do not go sufficiently distant to get on the best range. I am so perfectly convinced of the advantage of milking only a few cows that are stabled and fed well, that I shall hereafter adopt it in summer as well as in winter, and never separate the calves of the general stock from the cows. I have done so in a few instances, and the calves have always sold for eight dollars. Oxen that are worked should be housed, and well fed—they will improve, although worked every day, and will be in better condition than those that are out, and never worked. I frequently give my cattle salt.

You will perceive, sir, that I have not only given you a prolix account of *my* mode of managing the provision crop, but the mode previously pursued—I thought it best to do so, although it makes a long story of it, that you might see wherein I differ from the old system, by following which we seldom bought less than five months provisions; and by the present mode I seldom buy a bushel, and support a much larger stock than formerly. In speaking of guineacorn, I forgot to say, that I found it very productive on the clay land, and a most excellent and nutritious food, not only for stock and poultry, but for negroes.

I consider it equally important in a provision, as in a rice field, to have the low, sobbed places well drained.

I sincerely hope, that your efforts to promote the agricultural interests of our native State, may be amply rewarded.

Yours, &c.

A RICE PLANTER.

ART. III.—*On Planting, Pruning and Training Grape Vines*; by ABRAHAM GIEGER.

“ Mount Gill, Lexington District, Nov. 30th, 1830.

Dear Sir,—In my communication to you of the 23d inst. I declined giving you my mode of planting, pruning and training the grape vine, believing that there had been already too much written upon these subjects, and recommended those who intended to embark in the cultivation of the vine to make a visit to a vineyard, where they might inspect, and, in practical operation, see the cultivation of the vine. But, that I may not appear to you uncourteous in declining to give you my mode of cultivating the vine; and as I think no planter, when called upon by you for any information which is in his possession, should assume to himself the right to judge, whether information would or would not be of public advantage if communicated, but rather yourself, who is the medium of communication between us, and whom we all should acknowledge as the judge of what may, or may not be worthy of publication; I will therefore freely give you my mode of cultivating the vine.

I conceive it unnecessary for me to say, for I believe it is universally acceded to, that the highest situation on a plantation is the most eligible for a vineyard. In a former communication I expressed an opinion, that the two Madeira vines were alone worthy of the attention of the planter; and what I shall now say, is intended as applicable alone to those vines:—First, with regard to planting, I plough the land deep, and check it off ten by six feet; in each check I dig a hole two feet square, and eighteen inches deep; I set the plant in the centre, and observe to keep the plants in a straight line both ways, the furrow will be the guide; fill up with the best mould about the hole, within six inches of the surface, and fill up the balance of the hole with the poorest earth taken out of it. The object of this is, to make the vine root downwards, and prevent it from putting out roots near the surface. I take off all the shoots but one, and let that run on the ground. The second year I cut it off within one or two eyes from the old wood. When the vine puts forth the second year, I prune off all the shoots but one, always observing to have the

strongest and most vigorous shoot to run on the ground, as in the first year. If I want plants, this is the year I form them. When the vines have grown from six to eight feet in length, I cover them with two or three hoes full of earth, in the same way I would cover potatoe vines for slips. The first covering should not be nearer the old wood than four feet. The vines may be covered every two feet until the middle of August. The vines, the second year, will run from ten to thirty feet, and will admit of being covered in several places. The third year I put up my railing or arbor—the plan which I now adopt, is to split lightwood puncheons six feet long, of the thickness of common rails. These I char at one end, point them at the end charred, and drive them firmly in the ground at the distance of ten feet. On the sides of these, I nail laths split eleven feet long, the first three feet from the ground, the second ten inches above the first, in straight lines throughout the vineyard. The third year I trim the vines three and a half feet long, and to the first lath firmly bind the head of the vine, with a withe of willow or hickory switches. This year the vines will put out several bearing shoots. After the blossoms are formed, I top all except the most prominent shoot, which is to form the bearing vine for the next year. This shoot is to be trained along the first lath, and to be bound down to it. Cotton thread will answer. The fourth year I train my vines to a pole nine feet long, and bind them on the lower lath in three or four places. This year the vines will put forth, say from ten to twenty bearing shoots. After these shoots take hold of the upper lath with their clasps, I top them all, as the vines this year ought to yield nearly a full crop. These shoots form for the future the heads of the vine, from which the vine is to bear hereafter. They should be pruned according to the strength of the vine, from one to three eyes on every shoot. I speak of vines set out with roots. Vines from the cuttings will require two years longer, before they come to the same state of perfection. It is more advisable to get plants with roots, though cuttings may be had for nothing. From one acre of vines, by adopting the method above set forth for obtaining plants, they may be procured in sufficient number to set out from ten to twenty acres of vines. Some vines will bear putting down the first year, and make good plants, but plants from vines of the second year are to be preferred.

Vines require nothing more than plain weeding. The first year they may be ploughed as you would corn, and give them a light moulding. Vines will not bear grass or weeds. As a vineyard is worked the first and second year without profit, peas may be planted between the rows. The mode here given of planting, pruning and training the vine, is that which I have adopted as the best in this section of the country, but whether a different mode of culture would not be better calculated for the climate and soil of the upper and lower country of this State, may be probable, but this can only be ascertained by practical men in the business.

Yours, very respectfully,

ABRAHAM GEIGER.

ART. IV.—*On the Culture of Rice on Ridges ; by* ECONOMIST.

Sir,—Permit me to offer a few suggestions on the culture of rice, which experience has proved valuable, and which has conduced to my individual advantage. In the culture of rice, one of the most tender and critical stages of vegetation, is, during the time of its sprouting, and soon after it vegetates ; at these stages, too deep water or shallow water, are equally fatal—the first, if long continued, rots and destroys the plant, and the second condition scalds the delicate roots, and produces the same effect. On our inland swamps, the lowest grounds are the richest and most productive, but most exposed to the casualties above mentioned. My plan then is to ridge up the low precarious land, in beds of six feet wide, with alleys of about eighteen inches, from which the earth is taken to form the beds; the alleys should be well cleaned out ; that is, as deep as can be conveniently effected with a nine-inch harrow hoe—four or five rows of rice may then be sown in drills on each bed, or across the bed, in rows from a foot to fifteen inches apart, at most. The advantages secured by this method of cultivation, are, first, the raising of the plant above the common surface, and secondly, the operation of the alleys as drains, which takes off rapidly,

the water, when it subsides after an inundation, and thus prevents the tender fibres and roots from scalding; which experienced planters well know is fatal to the production of this grain. I would take the liberty of further stating to planters, who cultivate very deep tide-lands, (that is, such as extend far back from the river,) that as the lands most remote from the river, are lower, and from their distance also, drain less perfectly than those nearer the margin; an experiment may be made of the above plan of cultivation, (modified, should their judgment so determine) to suit the circumstances of their grounds, with a prospect of benefit. I believe that lands of the class last mentioned, are generally called black lands, light and porous, and the plan recommended quite applicable to them. Should these suggestions be considered worthy of publicity, pray insert them in your *Southern Agriculturist*, and should they be useful, it will gratify and fully reward, an

ECONOMIST.

ART. V.—*Sketch of a Plan of a House for Boiling Sugar, with a front view and ground plan; by A JAMAICA PLANTER.*

“ St. John’s River, East Florida, 9th August, 1830.

Sir,—Since my arrival in this country, I have had frequent opportunities of perusing your valuable and patriotic work, and have received a good deal of information as well as amusement from the communications of some of your correspondents on the cultivation and manufacture of sugar. Experience is the surest guide to a thorough knowledge of that most valuable culture and manufacture, but I am inclined to think it is sometimes rather dearly purchased: A plan of an *approved Sugar-house*, by “ *A Louisianian of Natchez*,” in your March number [of 1830,] has induced me to send you the enclosed sketch, which may perhaps be of use to some of your readers, who are about to engage in that business, as I think it is both more simple and more useful than the Louisiana plan; one considerable objection to which, is, that the “ *batteries*” are placed opposite to

each other on different sides of the house. I can assure you, from experience, that, in a calm close day, it is very distressing to stand before a single battery, enveloped in a thick cloud of hot steam. How much that disagreeable feeling would be increased by being placed between two batteries, so close to each other, I cannot say; perhaps some of your naval or military acquaintances may be able to give you some idea.

I have frequently found it very difficult to catch a glimpse of the fluid in the teach, sufficient to be able to determine when it had arrived at the granulating consistency. I have never used a thermometer, and cannot conceive how a person, endowed with the ordinary powers of vision, can use it with advantage in such cases.

The enclosed being sketched without mathematical instruments, may not be so exact as could be wished, but sufficiently so to be understood. When a distillery is not wanted, it is only necessary to leave out the part of the building, appointed for that purpose; and placing the molasses cistern under the platform in the curing-house. I have said nothing with regard to the mill, as it must vary according to situation and the moving power employed. If steam, it may be placed in a continuation of the boiling-house; if water, (which is the best) it must be placed according to the nature of the ground; and if animal, must also be placed as circumstances point out most convenient.

I shall probably send you soon a plan of the furnace, with some remarks on the culture and manufacture of sugar and rum. With best wishes for the Southern agricultural interests,

I am, sir, your ob't. serv't.

A JAMAICA PLANTER.

The annexed Sketch, is intended to represent a *single* set of Sugar buildings, capable of manufacturing at the rate of 30,000 lbs. of sugar, and 1200 gallons of rum, proof of 22° weekly.

In *Boiling House*, No. 1.—The copper wall (or as it is here called "*Battery*") A. to consist of one boiler of 300 gallons—one of 250—one of 150, and one of 75 gallons, with furnace of the most approved construction. The *coolers* B. to be 7 feet long, 6 feet broad, and 8 inches deep. The *skimming cisterns*, C. to

contain each 300 gallons. The *mixing cistern*, D. which is to be sunk in the ground and floored over, having a trap door of 4 feet square, and a pump to raise the liquor to the fermenting vats in the loft above, and to contain 600 gallons. The *molasses cistern* E, also sunk in the ground and covered as D. to contain 3000 gallons. The *cistern shed* F. to have two cisterns, holding each 300 gallons, to receive the raw juice from the mill, and with gutters, leading to the largest copper. G. is a *shed* to protect the fuel and firemen from the weather. X. is the base of a chimney—an arched flue leads from furnace under the cisterns.

In *Curing House*, No. 2, are two platforms, H. for draining sugar. J. J. *Molasses gutters*, leading to cistern E. covered over with planks which serve to walk on and are not nailed so as they can at any time be taken up to remove any obstruction in the gutters.

Rum Store, No. 3.—To contain gauntrees *a. a.* on each side for the casks to contain the spirits.

Can Room, No. 4—which is separated from the rum store by a lathed partition, to contain a tub under the mouth of the still worm, *b.*—10 cans of 5 gallons each, and a low wine butt of 300 gallons, with pump to raise the low wines to gutters in fermenting loft, to be carried to the still.

Still Shed, No. 5—To contain a 300 gallon still, worm and worm-tub or tank. The vessels to receive the lees from the still to be placed in the way most convenient for the still-house operations, according to the nature of the ground.

The *Fermenting Loft*, which extends over the can room, rum store, and that part of the boiling-house where the skimming, mixing, and molasses cisterns are placed, is lighted by the large and small windows in the front, and two or more small sky lights in the roof, and will contain 54 fermenting vats of 300 gallons each, with gutters beneath, leading to the still, and gutters over them, leading from the pump in the mixing-cistern to each vat.

If it is required at any time from increased cultivation to manufacture a greater quantity in the same time, it is only necessary to extend the front building as at K. so that the boiling-house will hold another “battery” and the curing-house a proportionably larger quantity of sugar. The front will then have three doors.

The marks — represent doors, and = windows.

Scale, 16 feet to the inch : length of front building, 104 feet ; breadth 32 feet ; length of rum-store and can-room 28 feet ; breadth 20 feet.

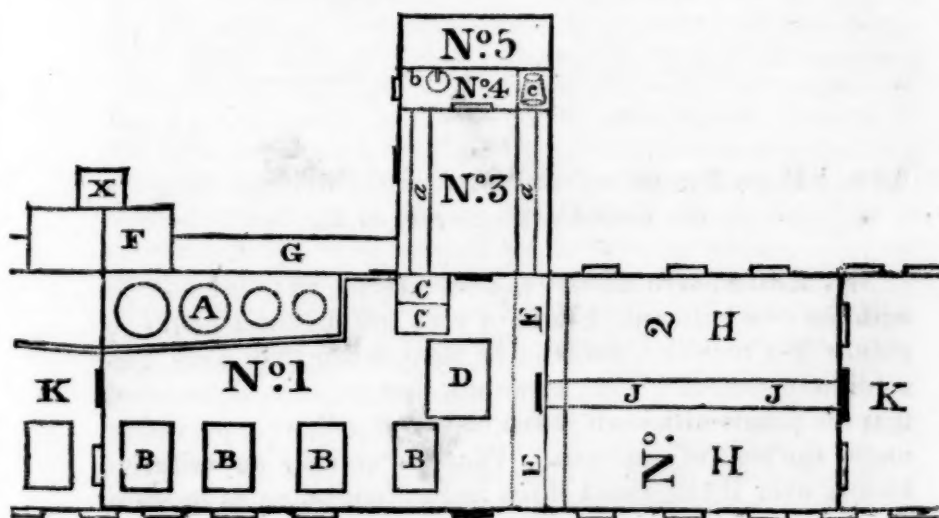
FRONT VIEW



Windows latticed, to open and shut like Venetian blinds.

Windows glazed.

GROUND PLAN.



ART. VI.—*On the Culture of Sweet Potatoes ; by J. B. HINSON.*

“ James Island, 15th February, 1831.

Dear Sir,—According to your request, I have given the manner I cultivate the sweet potatoe. My land is levelled the year previous to planting ; and manured by moving a cow-pen over it, or by putting ten or eleven cart loads of dry marsh to the task, or one quarter of an acre—or the same quantity of trash out of the woods, under the list ; then the same quantity of well rotted cow-pen or stable litter is put on the listing. I think the dry marsh and stable manure preferable ; my rows are laid off five feet apart ; I then have a good bed formed. My time for planting is about the fifteenth of March, in the usual manner ; as soon as the potatoes are up they are hoed as lightly as possible, and the earth immediately hauled up ; one old negro and two or three children are kept constantly in my potatoe field, weeding the beds ; and if they are not able to keep them clean, I render them some assistance, but would not on any account suffer the hoe to be used again. I have pursued this mode of culture for eight or ten years, and have seldom failed to make a good crop.

Yours, respectfully,

J. B. HINSON.

ART. VII.—*Account of an unsuccessful attempt to grow the Cow Cabbage ; by J. D.*

Mr. Editor,—In answer to your inquiry as to my success with the cow cabbage, I have a very indifferent account to give. We received the seed in May, when they were immediately sowed. They came up, but we soon discovered that the plants although judiciously watered, were perishing under the heat of our sun. We then erected an arbor of bushes over them, about three feet in height, so as in some measure to shade them. This plan preserved two or three

of the plants alive; but they never grew larger than to form four or five small leaves; and in the fall they perished. Perhaps if the seed had been planted early in the spring, or in February, the result might have been more fortunate.

J. D.

Columbia, January 10th, 1831.

We have twice brought this vegetable before our readers, and we again introduce it to their notice, in consequence of the very flattering accounts lately given of it, in several publications. From these statements we are induced to believe, that it will prove a most valuable acquisition to the Southern States, provided we can successfully introduce it. The proper time for sowing the seeds remains yet to be discovered, and several experiments will be necessary to ascertain this. Our correspondent sowed his in May. We will not pretend to say when would be most proper for that section of country, but certainly in the vicinity of Charleston it would be the very worse period that could be selected, and this is well known to every one who pays the least attention to gardening. It is true that cabbage seeds are sometimes sown then, but it is with the intention that they shall remain in the seed bed, and are not removed for some time; but this plan is but little followed, for the months of May, June, and July, are generally hot and dry. Nor does the cabbage succeed well with us, even when set out in spring, for they cannot endure any excess of heat, and they rarely form fine heads in the latter part of the spring or during the summer. The finest cabbages which we have are those which are transplanted in the months of August, September, October, and November, and we rather suppose September and October will be found the best months for setting out the cow cabbage, more especially if the seeds be from Europe, for the common cabbage cannot withstand the heat of our summers, when raised from European seeds; and those who wish to have cabbages at that period, are compelled to resort to seeds raised here. We know not whether this remark is applicable to the neighborhood of Columbia, but if it is, it will assist in accounting for the failure, for it is probable that the cow cabbage will be found to be governed by the same laws, as the common varieties. That our readers may form some idea of the value of this vegetable, we have here brought together such facts as we find in the periodicals of the day, and which may be of sufficient interest. The first notice we recollect to have seen, is contained in the following extract from the Gardener's Magazine :

"The Cow Cabbage—*Brassica oleracea* var. *arborescens*.—I inclose a few seeds of an arborescent cabbage, introduced from La Vendée by the celebrated *Compte de Puyssaye*, which pro-

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mises to be an important acquisition to agriculture. I have seen it growing in the garden of my friend, Admiral Brooking, here, to the height of 8 feet. In La Vendée, I am told, it attains an altitude of from 12 to 16, or even more feet. Being a native of a warmer climate, it should be planted in a warm and sheltered situation; sixty plants are said to afford sufficient provender for one cow for a year, and as the side shoots only are to be used, it lasts four years without fresh planting. A square of 60 feet will contain 256 plants, 4 feet apart, or sixteen more than four cows require for a year's provender, without the aid of other food. I shall be glad to hear the report of its success from those to whom you may communicate the seed.—W. HAMILTON. *Oxford Place, Plymouth, October 12.*"

In the subsequent numbers of this work, are published several notices of this cabbage, one of which we have already laid before our readers, and we will now give other extracts from this journal:

"It is much cultivated there, (Jersey) and attains the height of from 4 to 10 or 12 feet. The small farmers feed their cows with the leaves, plucking them from the stem as they grow, and leaving a bunch or head at the top. The stems are very strong, and used for roofing small out buildings; and after this purpose is answered, and they are become dry, they are used for fuel. When the gathering of the leaves is finished at the end of the year, the terminating bud or head is boiled, and said to be particularly sweet."

The next is a letter from Mr. B. Saunders, Nurseryman, Island of Jersey, which we give entire:

"Observing an article at p. 64. on cow cabbage, or Cesarean cole, communicated by Mr. J. Murray, permit me, through the medium of your Miscellany, to offer a few remarks on the subject. Having resided in this Island about twenty years, I have had an opportunity of appreciating the great advantage this variety of *Brassica* is to the small farmer as well as to the large one, and will, with your permission, give your readers a brief account of its culture and uses. The seed is sown, from about the 20th of August to the 1st of September, in a good soil, and planted out from November to January and February, in succession, at from 20 to 30 inc. distance, in a good, substantial, well-manured soil; as no plant is more exhausting or requires a better soil, but, perhaps, no one plant produces so large a quantity of nutriment during its period of vegetation. About the month of April they begin (from the first crop) to strip the under leaves, cut them in small pieces, mix them with sour milk, bran, and other farinaceous substances, and give them as food to ducks, geese, hogs, &c. During the whole summer they continue stripping the plant

as above stated, until it attains the height of from 6 to 12 feet ; and, if a scarcity of herbage prevails, the green leaves form excellent feed for cows and oxen, with alternate feeds of hay and straw. The tops and side shoots are excellent at table during winter and spring.

"The longest of the stalks are frequently used to support scarlet runners and other French beans, and as cross rafters for farm buildings under thatch, and have been known to last more than half a century, when kept dry, for the latter purpose.

"I am, Sir, &c.

BERNARD SAUNDERS."

It will be seen from this letter that the period of sowing the seeds in Jersey, corresponds with the time we recommend here. In 1829, this plant was introduced into the United States, by Mr. E. Durand, of Philadelphia. The article which notices this, goes on to say :

"In the Southern States, where artificial grasses are but rarely attended to, these cabbages will be invaluable for stock. In this state, and further north, they will require to be protected by Indian corn stalks, capped by a sheaf of straw, during the winter. Mr. Durand says that the leaves, in France, are constantly used in soup; and that, after they have been bitten by frost, they are delicious when boiled. The same remark is made in respect to the sprouts, which succeed in the autumn to the leaves previously detached. As "bacon and greens" constitute a dish as fully national in the Southern States as the *pot à feu* among the *tiers état*, or soup with the *bonnes gens* in France; the abundance of food which this cabbage furnishes to man and beast will render it a favourite vegetable with the people of the South, among whom, with some exceptions, horticulture, I am sorry to say, is little attended to."

Last year some account of the growth of this plant in the United States was given by two individuals (one of Virginia, the other of Massachusetts) one of which we published in our last number, the other does not materially vary from that one. In a late number of the New-England Farmer, we have the following statement :

"Mr. Thomas Stockbridge of Weymouth, Mass. has raised this season, about 700 plants of this singular variety of cabbage, which grew from two to five feet in height. He considers it superior to any thing he ever raised as fodder for cows. They will eat it in preference to English hay, good pasture grass, or any fodder he could give them; and sensibly increased the quantity of their milk. Horses eat it freely; but it seems to be peculiarly well fitted for milch cows. He kept a cow through the fall almost exclusively on between two and three hundred plants, although the first year of their growth, and he is satisfied that no plant, or

grass, will afford an equal amount of fodder from the same space of ground, as they yield a constant succession of thick new succulent leaves, as fast as the old ones are plucked. They should be sowed as early as possible in the spring, on the richest soil, and raised about two feet apart."

We have thus brought together all that we at present recollect of reading respecting this valuable plant, and our readers will, for themselves, judge of its value, though we believe there will be few who will not agree with us that its introduction is highly desirable. The extracts we have given relate principally to it as an article of food for cattle; but it is also, as will appear from the following extract of a letter from England, which is published in the *Western Tiller*, that it is also excellent for the table.

"The *cow cabbage* is that very large species of cabbage with a hard white heart, generally preferred by the Guernsey people for culinary purposes. The most common in Jersey grows about five feet or six feet high, and three feet in diameter. The *drum-head cow cabbage* grows about two feet high, the lowest leaves being on the ground, is also about three feet in diameter. The *heart* is very fine, hard and white, about eighteen inches in diameter, and is very good eating."

From our foreign correspondents we have received a small quantity of the seeds of this cabbage, which we have distributed among our friends, and we hope hereafter to give some account of their growth in the Southern States.—[*Editor.*]

ART. VIII.—*Observations relative to the Culture of the Poppy.*

Extract of a letter from Dr. ALEXANDER JONES of Lexington, to a gentleman of this city, dated Lexington, (Ga.) February 3, 1831.

Sir,—Enclosed I send you one ounce of my poppy seed. My return to Charleston being uncertain, I thought it would be best to send you some by mail, as by waiting for a private conveyance I might delay sending them till it would be too late to plant them. I discover that opium has recently risen in New-York to \$7 00 pr. lb. and it is thought that its rise will reach \$10 00 pr. lb. Its present price in Calcutta is said to be \$11 00 pr. lb. Indeed, its price in the

East-Indies, is always greater than it is in the United States ; so, that should its culture in this country, ever be so great, as to authorize it, it will at once bear a very profitable exportation to the East.

I feel happy that I have it in my power to place a part of my seed into such careful and skilful hands as yours, and sincerely hope that you may succeed beyond the most sanguine expectations. If my seed are found to have sustained any injury by the great drought experienced last year, I hope you will not fail to procure another supply of seed, which you can always do by application to Dr. George W. Carpenter, of Philadelphia, who can at any time send you genuine Persian poppy seed. I should be very glad to see some culture introduced that by its value may make amends for the very depressed prices of our staple commodity, cotton. I conceive nothing at present holds out a more flattering prospect, in this regard, than opium, if we except sugar : with this difference, that opium can be made where sugar cannot ; and with ten times less expense and labour.

Accept my warmest assurances of esteem and regard,

ALEXANDER JONES.

P. S.—It is said by Dr. John R. Coxe, of Philadelphia, that the best time for planting them is in the fall of the year. I think it probable, however, that at this distance in the interior, our winters would be too severe for them, as they appear like very tender plants when young. I should however suppose, the trial might be made where you live. If you desire a larger quantity of seed than I have enclosed, I can send you more.

ART. IX.—*Account of the Euchre Plant, and a statement of the quantity of Rum produced from the juice of the Sugar Cane grown in South-Carolina; by P. CHARTRAND.*

Dear Sir,—I send you a specimen of the euchre plant—you will perceive the horizontal piece is the original plant—the vertical, the stock—and the fibres produces the potatoe

or root. These are grated over a vessel containing water. The water for the purpose of rinsing the grated particles, after allowing a settlement. The coarser parts are drawn off and prepared as you would a hoe cake, then baked: which constitutes the casava. The finer parts or sediment furnishes a superior starch.

I also send you a sample of South-Carolina rum, from my small still; from four gallons of cane-juice it produced six bottles of spirits; the last bottle losing considerably its proof. Therefore, I calculate on a quart to every five; or otherwise one-twentieth. A good deal depends for flavour and proof on the fermentation of the reson.

Respectfully, your humble serv't.

P. CHARTRAND.

Tivoli Garden, 8th December, 1830.

ART. X.—*On Plantation Gardens; by the EDITOR.*

(Continued from page 138.)

Seeds.

Having given the culture of such vegetables as we deem proper for a plantation garden, it remains for us to give a few directions for the raising of such seeds as can be grown in these States with advantage. We have already stated our belief, that most seeds can be raised here, and that there is no foundation for the opinion which supposes foreign seeds are to be preferred. We do not now see any reason for changing this opinion; but on the contrary, we are the more confirmed in it, not from mere speculation or theory, but from actual experience—in fact, so far from preferring foreign seeds, or those grown in the Northern States, (except in certain cases which we have noticed) we rather choose those grown among us, provided we are satisfied of the purity of the kinds, and that proper care has been taken in the selection. It is a neglect of the proper precautionary measures, which has brought our seeds into this bad repute. The first and best are used for the table, and the bad, or that which remains after the palate has been satiated, is

thought quite good enough for seed. Nothing can be more erroneous. The first and the very best should always be selected for this purpose; and if this rule be adhered to, we affirm that in a few years better seeds will be had by those who follow it, than can be procured from seedsmen. We have verified this in several cases ourselves, and have known it successfully practised by some of our market gardeners. Moreover, we know that seeds and plants like men and animals, require to be climatized, and this is so well known and practised in introducing them from a warm or southern clime to a cold or northern one, that every precaution is taken to guard against the coolness of the climate, either by protecting; sowing or planting nearer to midsummer, or where the season is too short, or too cold, by applying artificial stimuli, and in many cases forming artificial climates for them, by the means of conservatories and hot-houses. By pursuing these steps, very many plants, shrubs and trees, have been introduced into northern climates, from more southerly ones, and by degrees inured to it, which in the first instance could not withstand even a climate several degrees milder. But how is this effected? By first placing them in a hot-house or a conservatory, and from thence gradually inuring them to the climate, or by repeatedly sowing their seeds, and exposing each generation somewhat more than its parent was. This has been long known and practised on by horticulturists; and any one who did not take such precautionary steps on introducing a plant, would be esteemed a dolt, and would certainly lose it. It is certain that every species of the vegetable kingdom requires certain degrees of heat and moisture to bring it to its greatest perfection, and if any sudden transition takes place, a violence is done to its habit, from which it cannot recover, or but slowly. This transition is not so sensibly felt by seeds, for every vegetable endeavours to accommodate itself to the climate and situation in which it is placed; still, however, if the change be great, it will manifest itself—in some by merely vegetating and then dying, others will drag on a sickly existence for a short time, and then perish without perfecting their seeds; whilst in others it is only exhibited in a slower growth, until the climate becomes more congenial to its habits, by an accession of heat, as the season advances. The knowledge of these facts have been used, as we before observed, principally in

the removal of plants from a southern to a northern latitude ; but we are firmly persuaded that the violence done to many in introducing them from a northern to a southern climate, is as great as the contrary. In the one instance, the severity of the winter and cooler temperature during summer, is to be guarded against—in the other, excess of heat is to be encountered. We do not advance this theory, without having facts to support it. We have verified it in trees, shrubs, and vegetables, and a remarkable instance passed under our notice so recent as the last summer, which goes to show that even natives of warm climates, when they have been long cultivated in more northern latitudes, have a violence done them by re-introducing them into such as they were taken from, and in fact require to be re-climatized. It was thus we imported the last year from England, five varieties of what are termed here musk melons, principally consisting of cantaloups, some of them as their names indicated, were of Spanish and Portuguese origin, but this is of no moment, for we are all aware that the melon is a native of a warm climate, and grows to the greatest perfection in the Southern States, especially in the neighborhood of Charleston. These were planted the 22d of March, and had every care bestowed on them, both in the selection of soil, manuring, and after-culture, yet from them we did not get a single melon, they produced a luxuriant growth of vines, and blossoms in abundance, but all of the fruit fell, without even swelling off, except in the case of a single vine, which yielded three small insignificant melons, when they ought to have become very large and fine ones—finding that the fruit dropped in the same way as they do when not impregnated, I fecundated several—these made an attempt at swelling off, and remained longer on the vines, but finally fell without increasing materially in their size. The effects which we have here given, is not to be ascribed to a season unfavourable to the growth of this fruit, for we had them growing in their immediate neighbourhood, and on similar soil, which yielded as well as usual. Nor is the failure to be attributed to an improper selection of site for them, for they were planted both in moist, and high, light soil. To what cause is this total failure to be attributed? We certainly think to their being introduced into a climate too warm for the habits they had acquired in the pits and hot beds of

England, for they are not able to cultivate them there in the open air, but have to resort to these means. The change in the first instance, was too great, and they would have done better had they been cultivated first in some of the Northern States, and the next year brought here. We are aware that an isolated fact like this, would prove nothing, but when taken in connection with what takes place on the introduction of other plants, it will go far to confirm what we advance, viz: that plants require as much to be climatized when removed from a northern to a southern latitude, as when they are removed from a southern to a northern one. The Irish potatoe when first brought from England to this place, will produce only small tubers, and cannot be relied on for a crop*, but this is not the case we believe in the Northern States, where the climate is intermediate between theirs and ours. The cucumber brought from England produces very little fruit with us the first year, compared with those from our own seeds. The cabbage from English seeds, however fine the variety, does not head, and cannot withstand the heat of our summer, whilst the same seeds sown so late as to have them heading in winter and spring, (a time when our climate is most assimilated to the one to which they have been accustomed) produce the very finest plants. And here again with these is exhibited another phenomenon—instead of running to seed as is the case with plants from native seeds, the heads remain firm, and rot if not used—whereas those from American seeds will on the first indication of spring, run to seed. It is not necessary for us to examine into this, or to advance any theory respecting it; sufficient for us, is it to know that the fact is so, and that it is not confined to the cabbage tribe alone, but that there are other vegetables which are subject to the same law, and a knowledge of this is of eminent service to the gardener. In what we have advanced, we would not be understood as wishing to exclude foreign seeds from our gardens. On the contrary, we know that at certain periods of the year, it is absolutely necessary to have such, if we wish to have particular vegetables in perfection.† We

* We observe in a late periodical, that this takes place in England when American sets are planted. The tops are very fine, and but very few tubers are produced.

† These we have noticed under their respective heads, in treating of their culture.

wish merely to remove the strange prejudice which pervades our community, against the use of native seeds, or such as are raised in our neighbourhood. This prejudice is both unjust and unfounded. It is true that at present it is rare to meet with good varieties raised or originated among us, but this detracts nothing from the soundness of what we urge, for it is owing either to ignorance or neglect that this is so. How rare is it to see the least precaution taken to preserve those families distinct which are most closely allied, much less such as will fecundate each other, although not obviously of the same family. And unless selections be made, and the necessary steps taken to prevent the admixture of the farina of different species and varieties, we have no right to expect good and genuine seeds. But this can be as well effected here as elsewhere, and is surely an object of interest to us, especially to those who wish always to be certain of the character of what they grow in their gardens, and not after taking all the pains necessary to ensure a good crop, find when the season has passed, that they have been deceived in their seeds, and what they are cultivating are not worth the room they occupy.

But can we raise all of the seeds we require, in this climate, and if we can, can each one do this? To the first we reply, that we at present recollect no seed that cannot be grown among us, (we except for the present the cauliflower, of which too little is known among us, and too few experiments made to determine this point.) To the second, we reply, that on our plantations this can be effected, perhaps equally as well as in those places from whence we receive our supplies, if not better. The great extent of our fields, affords us the means of keeping the several varieties entirely separate and distinct, and the greatest danger to be apprehended is from an improper selection, in which case degeneracy will follow as a matter of course. We would advise, however, that but few vegetables of the same family be cultivated for seed in any one year, however extensive our fields may be, for it is certain that the wind and bees carry the farina to a much greater distance than we are aware of; a very remarkable instance of which is related of two palm trees, in "*Conversations on Vegetable Physiology.*"

"There are two remarkable palm-trees in Italy, which have been celebrated by the Neapolitan poet, Pontanus; the one, situated at Otranto, has no stamens; the other, at Brindisi, which

is about forty miles distant, has no pistils, consequently neither of these trees bore seed; but when, after the growth of many years, they rose superior not only to all the trees of the neighbouring forests, but overtopped all the buildings which intervened, the pollen of the palm-tree at Brindisium was wafted by the wind to the pistils of that at Otranto, and, to the astonishment of every one, the latter bore fruit."

In a small garden, we believe it almost impossible to effect this, for there are so many vegetables required, which are either mere varieties, or of the same species, and come into flower at the same time, that it would be impossible to prevent the farina of the plants intermixing and fecundating each other. It is best in such places to grow only a few, and those such as may be most difficult to obtain pure; and not on any account to grow those which have the least affinity to each other, in the same year. Much too may be done by knowing how long seeds will remain sound, as we are able to keep several many years, and therefore may by growing one variety each year, possess ourselves of as many as we desire, without the least danger of intermixture, *provided no neighbour's garden is near*. That our readers may possess this knowledge, we here extract from Cobbett's English Gardener, a table showing the various ages that seed will grow at in England; and this table is confirmed by several writers on Horticulture. We know not how far it will answer for our climate, which is so much hotter and dryer than that of England, no experiments having been carried on here to ascertain these facts. We will be able, however, to have some idea of the length of time they will retain their germinating qualities.

	YEARS		YEARS		YEARS
Artichoke	3	Caraway	4	Gourd	10
Asparagus	4	Carrot	1	Hop	2
Balm	2	Cauliflower	4	Horse-Radish	4
Basil	2	Celery	10	Hyssop	6
Bean	1	Chervil	6	Jerusalem Artichoke	3
Bean (Kidney)	1	Cives	3	Lavender	2
Beet	10	Corn	3	Leek	2
Borage	4	Corn-Salad	2	Lettuce	3
Broccoli	4	Coriander	3	Mangel Wurzel	10
Burnet	6	Cress	2	Marjoram	4
Cabbage	4	Cucumber	10	Marigold	3
Calabash	7	Dandelion	10	Melon	10
Cale	4	Dock	1	Mint	4
Cale (Sea)	3	Endive	4	Mustard	4
Camomile	2	Fennel	5	Nasturtium	2
Capsicum	2	Garlick	3	Onion	2

	YEARS		YEARS		YEARS
Parsley	6	Rhubarb	1	Sorrel	7
Parsnip	1	Rosemary	3	Spinage	4
Pea	1	Rue	3	Squash	10
Pennyroyal	2	Ruta-Baga		Tansy	3
Potato	3	Salsify	2	Tarragon	4
Pumpkin	10	Samphire	3	Thyme	2
Purslane	2	Savory	2	Tomatum	2
Radish	2	Scorzenera	2	Turnip	4
Rampion	2	Shalot	4	Wormwood	2
Rape	4	Skirret	4		

In making these remarks, we have occupied already the space we had allotted ourselves in this number, we must therefore defer our remarks on the raising of seeds for the next.

(To be continued.)

ART. X.—*On the Rearing of Stock in the Middle Country;*
by A PRACTICAL PLANTER.

“Near Mount Vintage, (S. C.) 7th July, 1830.

Dear Sir,—Your letter of the 28th June, duly came to hand. If my feeble efforts can have any tendency to benefit the planting and farming interest, or are found worthy of insertion in the *Agriculturist*, it will give me pleasure. But there are so many that can do more justice to subjects of this kind, that any production from me must be cast in the shade.

With regard to your request on the subject of stock, as well as other matters, I would observe, that my small planting interest has been mostly confined to the cultivation of cotton and corn; and what I may now offer is more from the result of observation, than practical knowledge, and of course may be subject to errors. I mention this, because I know that theoretical speculations clothed in plausible language, frequently has a tendency to mislead the plain practical planter or farmer, and induce him to deviate from his usual practice in the expectation of doing better.

This like all cotton growing sections of country, where cotton is made the principal crop, the raising of any kind of stock is impracticable as a matter of profit. There is little or no cessation from labour on a cotton and corn planta-

tion, from the preparation for a crop until it is carried to market; in any interval, the plantation must be put in order, and land cleared, if necessary, for a succeeding crop. How then is the force employed for this purpose, to raise stock—where are the shelters to protect them from the inclemency of the weather, and where is the food to support them through the winter months? Is the run of the fields, after the crop is gathered in, the bare corn stalks, and the gleanings of peas with other vegetation destroyed by frost, and the scanty manner in which the corn husks are often dealt out, sufficient to make it an object to raise stock? Look at the skeleton appearance of the cattle in the month of March, hardly tempting enough for a turkey-buzzard to cast an eye at them as he soars by in search of prey. If they range in the woods, nothing but leafless shrubs and dead leaves are presented to them; they anxiously look for the budding season, and the little early grass that may appear about the branches. Should the spring be protracted, their condition becomes desperate—should they survive, it is not until late in June that any wholesome beef can be expected from them. We must leave this pursuit to the grain and grass growing countries, and content ourselves with raising what is necessary, or what we can for our own consumption, without any attempt to go farther.

Besides the foregoing remarks on stock generally, I will attempt to give further reasons, why sheep will not succeed in this country.

Of all domestic animals, they are the most tender and helpless, and require the greatest attention; they consume more food than any other animal in proportion to their size, and this food must be frequently changed, and must be of better quality than what is given to the more hardy animals. Are we prepared to meet these requisitions? Have we clover fields or any grasses on which we can calculate for the raising of this species of stock? And as I have before observed, where are the shelters to which they can resort in inclement weather, and the food to sustain them, when vegetation is laid prostrate by frost. It may be further remarked, that the shearing time happens when the greatest changes take place in the weather, and that hot is succeeded by humid and cold atmosphere; the sheep disrobed at this period of what nature intended to resist these sudden changes, become subject to disease. This fact is evidenced upon those sheep that have been estray during the general shear-

ing time, and are afterwards brought up to undergo that operation, when the season has become more uniform, having the greater part of their wool torn from them gradually by the brambles through which they have passed, are found to be more healthy than others. From this it may be inferred, that in this climate, to suffer sheep to ramble at large during the spring, summer, and autumnal months, from the first springing up of grass and putting out of shrubs, until this kind of food is destroyed by frost, would succeed better than the European mode of close folds, which has failed. But while there are so many dogs allowed on every plantation, this experiment cannot be attempted. It would not be hazardous to assert, that there are on an average on plantations, as many dogs as effective hands; and these half starved dogs will seek out the sheep in preference to other animals, not for any predilection they have for that kind of food, but from instinct—knowing the non-resistance and the calm manner in which they resign to their fate, not even bleating to call in assistance. In conclusion, all that we can expect from sheep, is for the table, and their wool for domestic purposes.

Respectfully, yours,

A PRACTICAL PLANTER.

ART. XI.—*Observations on the propriety of Listing down Weeds and Grasses in August, preparatory for a Cotton crop; by W—.*

“Ah Pericles! those who have need of a lamp, take care to supply it with oil.”

In preparing a field to plant cotton, it is usual to begin the work by listing, in the winter season. The weeds and grasses which are found upon the field, are all of a matured growth, cured in the wind and sunshine of the late autumn, and perfected in their durability by the frosts of winter. In this state they are turned into the alleys and left to be decayed by the time they are required to enrich the land for the proposed crop. But surely at this season there can be very little fermentation in materials of such a character. It is not, therefore, until the rains and the warm weather of spring have exerted their influence, that they can be sup-

posed to enter upon the process of decomposition. When at this stage, the listing is soon banked over, and the seed is put into the top of the beds, and the planter enjoys his expectations of a crop. In ten days the plants are seen in abundance along the ridge, and exhibit the most promising appearance. But the fermentation which has warmed the beds, has consumed a part of its materials, and gradually it becomes hollow beneath the roots of the plants. Water from the heavy showers of that season begins to be absorbed and retained by the spongy residuum below, aided by the concave and indurated surface of the old alleys in which it is contained. What then is to be expected? Why that the precocious plant should shoot up into a slender growth until the summer months begin to dry the earth. It has already been exposed to winds, which have shaken it about until the earth, too loose in its texture, is opened like a funnel at its root, and until, by continual friction, the wounds on the bark of the plant, have become a disease. Has it escaped from these difficulties. and arrived at the season for putting forth its branches and its pods? the hot sun which has checked its growth and hastened its maturity, has dried the moisture from the still decaying vegetation at its tap root, and it begins to look yellow and droops.

The labour of the hoe has now been completed, and nothing more can be done than to await the harvest. But alas! a storm intervenes, the water returns to the roots, invited into the blind drain beneath the bed, and the overseer writes that he is very sorry to inform his employer, since the late storm the cotton has in many places turned blue, in others taken a second growth, and has every where cast its pods. He is happy to add, however, that he has been more fortunate in making an abundant crop of provisions. Thus the honest Dutchman who fell from a ship's maintop and broke his legs thanked God that he saved his pipe.

It seems to me that there is but one means to prevent this whole history of misfortunes in cotton planting, and that is *to list in August.*

The weeds and grasses which have grown on the field are then arrived at maturity, and between that period and the usual time for listing, there must be a diminution rather than an increase of either bulk or weight. In the mass, however, a large portion is still green, which aids the rest in the process of fermentation and decay.

While the weather is still warm, and while the plants still retain in themselves the means and all the materials for decomposition, it is *ceteris paribus*, incontrovertibly the best season for promoting that object. During the winter months not merely the temperature is too low to induce fermentation, but even the vegetable materials are so well cured, have become so hard and dry, as to offer the greatest resistance even if exposed to it in a more favourable temperature. A friend to whom I had expressed my ideas on this subject, suggested as an objection the received doctrine of Sir Humphrey Davy, that it is better to use the unrotted than the rotted manure, and inferred that upon his principle it would be better to have at the roots of the cotton in the spring, the undecayed list, than the well rotted vegetable manure, which by my method I had proposed to substitute. But the reason of Sir H. D's preference was, the loss which would be sustained by the undecayed and vegetable matter in the process of decomposition by the evolution of gasses. These gasses he had already shewn constituted a part of the weight and bulk, and upon application to the roots of grasses from the spout of a retort, had abundantly caused an increased growth. But my plan is clearly so far from being obnoxious to this objection, that it prevents the contemplated loss, by covering and securing the whole mass of materials, six or seven months beforehand, and by placing the earth which is to sustain the crop, in a situation to receive and absorb the gases which are evolved. Another objection which I have heard, offered to listing in August, is, that the land must be exposed during the winter and by that means exhausted. This inference, I apprehend, is almost peculiar to this country, for in every other it is thought that the greatest advantage is obtained from a fall ploughing.

It is generally supposed that by exposure to the frost, lands are mellowed and rendered more light and friable, and that many roots of noxious weeds and grasses are destroyed—which from having been an impediment to its productiveness, would in their decay become a means of enriching the soil. On a well stocked plantation, where (as has become customary on our sea islands) there are but two changes of fields, there may be a reasonable anxiety on account of pasture for the cattle. Under the same enclosure, however, there is almost always a body of corn land sufficient for this purpose, which for the most part will have re-

mained until this season, unpastured, on account of the preference which cattle have to the sweeter grasses of the high land. The pine barren with its gales and cane breaks, offers another alternative ; but should all these still be insufficient, it might then be worth while to pass a small harrow over the ridges of the beds, from which the list had just been taken, and seed them with a crop of turnips and rye. This would soon afford a good green pasture, and recovering when the cattle shall have been turned into the alternate field, it will compensate for the little additional labour, and the expense of seed when bedded up in the spring for the ensuing crop. I do not believe that there is a cheaper method of improving lands, than that of turning in a green crop, and by the course here recommended, you have the means of doing so twice in the same year, without any serious addition to the ordinary labour.

I repeat the opinion therefore, that there is no proper season for listing but the last of summer, while the plants to be rotted, yet almost green, retain the means of their own decay, and while there is still enough of warm weather in the fall for a complete fermentation. The list then dissolves—forms a black loose mould with the adjacent earth—has a consistency that can support the cotton and that unctuous slimy character which seems peculiarly the food of plants.

The common opinion that lands require rest, and grows tired of the cotton-plant, should be understood with a proper allowance for technical language. A field that is well manured requires no rest, and it will never become tired of the cotton-plant, while the strength of the land is sufficiently renovated to sustain it. How to restore land with economy, is an affair of calculation. By my arithmetic it will cost less to turn out fields as we are accustomed to do, than to use the means which are resorted to in old countries, where lands are dear. But he who supposes that it is unnecessary to turn into the soil the produce of the year, may as well expect to grow rich by cotton planting without being at the trouble of gathering his harvest. If every "old field" in this southern country, could tell the story of its misfortunes, it would say that it had become so from resting, and if the wind could be understood when it whispers among the broom grass, it might be supposed to talk like Anaxagorus, and quote our motto.

W—.

PART II.

REVIEW.

ART. I.—*A Treatise on the Breeding, Rearing, and Fattening of Poultry.* London. 1819.

(Continued from page 150.)

We come now to what may be considered the most interesting part of this treatise, for however good the rest of the work may be, yet there is contained in this part more minute information than in any other division, and some of it of such general application, that instead of being the last it ought to have been the first of the treatise. It commences with some general notices of the cock and hen, from which we learn that in the wild state, they are only to be found in South-America and India. So long have they been domesticated, that it is not known when they were first subjected to the control of man, and it is not very long since it was known where they could be found in their wild state. There is so much interesting matter which we wish to lay before our readers, that we will pass over the introduction, and at once enter on what will be of more service to the practical farmer. We will commence our extracts with the hen house and its appurtenances.

"It is well known that cold benumbs fowls, retards and diminishes their laying; that a too intense heat weakens them; that the want of good water gives them the pip, costiveness, and other inflammatory diseases; in fine, an infectious atmosphere makes them drooping, whence it naturally follows, that their fecundity is less, that the flesh is not of so good a quality, that the rearing of them is difficult. Under such circumstances one may judge how important it is, for the improvement of poultry, that it should be wholesomely, comfortably, and cleanly housed.

"To center every advantage that can be wished for in a hen-house, it is then essential that it be neither too cold in winter, nor too warm in summer; the fowls must take a liking to it and not be tempted to go to rest and lay any where else. Its size must be proportioned to the number of individuals, but sooner smaller than too large, because in winter fowls electrify, and impart their own warmth to each other. Let it not be feared, that in being so confined, they will hurt and infect one another. It is proved, that fowls which wander about are not very fruitful; and that the closer they are confined, the more ardour they experience in laying, in cold weather even.

"The best hen-house is situate to the east, rather near, but not too much so to the farmer's house; it is a square of 12 feet in length by 10 in width, and as much in height; it is raised one foot from the ground; the walls are thick, well plastered, and white-washed inside and out, having neither

chinks nor crevices, nor cavities, which leave room for martins, weazels, rats and mice, and even insects to get in, and to remain there; the roof that covers it juts out very much; shelters it from wet, the most dreadful scourge of fowls; the door is small; above it is an opening, by which the fowls come in from without, by the help of a ladder, and go and place themselves on the roost, which is purposely fixed on a level with this opening, as well as two windows of a circular shape; the one to the east, the other to the west; both supplied with a very close netted grating, and an outside shutter.

"These windows, which serve to keep up drafts of air, which sweeten the hen-house, and especially keep them dry, are left constantly open in summer, and shut close in winter.

"In the inner angles, the roosting bars are placed on little anvils, and at ten or twelve inches distance from each other; they are perches which must be squared, because the fowls could not grasp a round perch, neither could they bend their claws, their nails, nor keep steady on them.

"The intermediate spaces are left for the laying nests, all covered over with a board, to shelter the layers from the dung of the other fowls, and procure that rest they seek for in the instant of laying.

"The laying-nests are wicker baskets fixed solid against the wall; they are well stuffed, often recruited with rye straw bruised, and so nicely adjusted, that the hens may enter them without the risk of breaking the eggs contained therein.

"It contains a water-pot, similar to that in aviaries, in which fresh water is always kept to sweeten this hen-house; the fumigation of aromatic plants are no longer in use, such as incense, benjoin, &c. of which agriculturists have formerly given so many various receipts; because we have learnt by experience, that these fumigations are hurtful to the fowls in many instances; that they in general did not purify, that they only aromatise putrid miasms. Nothing is employed but fire, air and water; these three agents are sufficiently powerful and active to produce the best effects.

"Therefore, after the hens are gone out, the door and window of the hen-house is opened, and a small truss of hay is now and then burned in it, for the better renewal of the air, and destroying insects. The baskets of the nests, the perches, the troughs, the water-pots, &c. are scraped and washed in cold water, and sometimes even in boiling water, mixed with a little vinegar. The ground, paved with flat or polished stones, or with good pan-tiles, is frequently swept, scraped, washed, and covered over with a layer of gravel, or straw chopped small.

"The same hen-house should only be for cocks, hens and pullets; other places must be had for the other birds of the poultry-yard; fowls, which consent to live with them in the day time on the same dung-hill, do not like to be with them during the night under the same roof; they neither like to have capons in their roost, although of the family.

"It is necessary that there should be some very warm closets adjoining the hen-house, as well to having eggs hatched, as for putting in the chickens arising therefrom.

"In the coop on purpose for the chickens, are separate pens, where each mother remains eight days with her family, from thence they go into a close, till having completed their education, she may without danger leave them to themselves.

"The appurtenances of a hen-house are:

"1. A small pit filled with sand and ashes; the fowls like to be in it in summer, to get rid of the vermin which gnaw them.

"2. Another small pit containing horse-dung, which is often renewed, and which they amuse themselves in scratching in cold weather after grain and worms.

"3. Two square grass plats, which are successively given up to them, to feed and divert themselves on.

"4. Very thick hedges, or still better, trees that can afford them shelter against the heat of the sun, and hide them from the piercing eye of the kite soaring high in the air. These trees are usually mulberry or cherry-trees, the fruit of which they are particularly fond of.

"5. A shed, where they can be sheltered in rainy weather.

"6. Stone or wood troughs, covered over, in which the fowls, by putting their head through the openings made on purpose, may drink clear water, rather than go and drink that which is foul, and liable to give them various diseases.

"7. Lastly, the poultry-yard that contains the hen-house, and all the appurtenances as above pointed out, is extensive, spacious, clean, as much as possible. The dunghills are swept up with care; the water is sufficiently drained off. The numerous and great variety of poultry which inhabit it, finds abundance of every thing, seems not to regret its liberty."

Next follows an account of the qualifications necessary for the "*Girl of the poultry yard*," which, after saying much, of little interest, he thus sums up:—

"She must know then, 1. That raisin stones stop the laying of hens, and that during which time their use must be forbid them.

"2. That very nourishing and slightly salted food are favourable to it.

"3. That the pip giving notice that the hens have experienced a dearth of water or have drank some foul, she must, after making them undergo the operation which is proper in this case, pay attention in giving them always plenty of good water, being careful to let them have it luke-warm in winter.

"4. That in a looseness occasioned by too moist food, she must give them that which is dry and rather astringent.

"5. That in costiveness, it is useful to employ loosening food, such as beet root, lettuce, &c.

"6. That in the itch, or other disease of the skin, it is good to cool them with pot-herbs chopped up and mixed with bran soaked in water.

"7. That when they have the gout, she is warned to take more care of the hen-house.

"8. That when the shells of the eggs are rather soft, it is because they are rather inclined to turn to fat. It is then proper to diminish their portion; it is also proper to mix up a little chalk in their water, and to put a little brick dust in their victuals.

"9. In fine, that she must avoid giving them paste of bitter almonds destitute of oil, bitter almonds being poison to them."

From the chapter on the food of fowls, we find little to notice: the mode of feeding them, recommended, is, to say the least of it, troublesome and unattended with any advantage which we can perceive, over that pursued in this country. It is to make a paste of bran, and afterwards mix it with siftings of rye and other grain, &c. this must be given to them warm, the next day, or potatoes may be substituted, but in that case it is best to make it up into bread, and still better to soak this bread in soup, before it is given to them. Now we cannot perceive the utility of all this. The fowl feeds readily and greedily on every kind of grain, or other alimentary substance, and fattens on them, whether they be cooked or not. It is true that some experiments which have been made relative to the nutritive or fattening qualities of grain, boiled or unboiled, are highly in favour of the former. But

if this is done, (and in doing it more is saved than repays for the trouble) it is, we think, enough, and there is not a necessity of making either paste or bread, for fowls. But there is another article recommended by him which we do not think so lightly of—it is a *worm bed*. The fowl, as is well known to all of our readers, is both carnivorous as well as granivorous, and she is constant in her searches after worms and insects—of these it is seldom, even in summer, that she can find a supply, and during winter it is next to impossibility. Our author, therefore, directs that a worm bed be made, and gives these directions :

“ The strong taste that fowls evince for worms, has made us hit on the following ways of increasing them.

“ Make a paste with the leaven of barley, bran, and horse-dung ; put it in a proper vessel ; at the end of three days, if the weather is warm, it will be full of a multitude of worms, which serves the fowls to feed on. But here is another process on a larger scale.

“ In a part of the poultry-yard, high enough for allowing the waters to drain off, four walls are thrown up, each twelve feet in length, and four in height, which forms a square pit ; into this pit is put the following, one after the other ; rye straw chopped, fresh horse-dung, light earth, moistened with bull's, or other animal's blood, and a mixture of the refuse of grapes, oats, and bran. On the last bed, the intestines of animals, cut in bits, are laid ; then beginning again by a bed of straw, the same ordered is followed as at the first, till the pit is filled up. It is then covered over with prickly branches, which are secured by large stones, to hinder the hens from coming near it. This mixture, is, in a manner, changed into a swarm of worms, which is taken care of for them in the season, when the surface of the earth being frozen, can no longer afford them any, and which is given them every morning in small portions.

“ When the poultry yard is very large, several more beds are laid ; but great care is taken not to let them have their fill of them : Sometimes children are employed to follow a gardener and pick up the worms which he drives out of the ground in digging with his spade ; or, again they are told to turn up the ground with a three-pronged fork. This motion, which imitates the labour of the mole, induces the worms to quit their hiding place, to avoid their enemy, and thus fall into the children's hands.

“ Bones, coarsely powdered, may again be used as a change of diet for fowls ; they digest them with as much ease even as the stones of olives, which, however, are voided whole by animals chewing the cud, and which are not to be found again in the dung of fowls.

“ The digestion of fowls being chiefly performed by trituration, they are by instinct inclined to swallow small stones to aid the muscular force of their gizzard ; but it often happens that on meeting with glass, they swallow it the same as hard bodies, without troubling themselves about the faculty it has of cutting and piercing. The dire effects of this substance, which have taken place on several fowls, should induce breeders not to suffer that among the offal of the kitchen which is thrown to them on the dung-hill, there should be any glass. They should indeed extend this attention over many other substances. Some hens had eaten some muscle-shells, and many of them died. To save the others, their crop was opened, cleaned, and sewed up again : fortunately this operation succeeded ; but it is still better not to have it to do.”

The laying of hens commences in warm countries in February, and somewhat later in cold ones. Their fecundity varies—some lay only every third day, others every other day, and some

every day, and lastly some lay two eggs in one day, but this is uncommon. After furnishing eighteen or twenty eggs, hens would set, were the eggs not taken away as often as laid; finding an empty nest constantly she continues her useful labours, until the end of summer, when it is put a stop to by moulting, a "species of disease which they experience every year." This, and the approach of winter, affords them that rest which nature requires, and with the commencement of spring they re-commence their labour. Hens live only five or six years, and at four they are considered old. It is therefore necessary frequently to renew them. When a hen desires to set it is made known by clucking, and other symptoms, which are easily recognized, especially by her willingness to remain on the nest.

"It is not sufficient for hens to evince a fancy to set, to be entrusted with this business, experience has learnt, that they are not all equally calculated for performing it well. Those the most apt to it, are at least two years old; they must not take fright at any thing; they must be of a strong complexion, must have a broad body, large wings, well supplied with feathers, their nails and spurs must neither be too long nor too sharp."

"In order to ascertain the propensity of a hen of this sort to lay, she is left for a day or two in the nest on a few eggs which are given up for this purpose; if she remains on it with constancy, she is deemed a good setter, and she is taken to the place where the quantity of select eggs, necessary for each brood, has been laid out in baskets. She is laid softly on the eggs, she is covered with a cloth, which is only taken off her but once a day, in the morning, when she is taken up to make her eat her meal, which is set by the side of the nest. A necessary precaution for keeping her the least possible time absent from her nest; let not the least cold, especially towards the incubation, cause the young ones to perish in their shells."

"Those eggs intended to be submitted to incubation, must be gathered up with still more care than if they were to be employed as aliments."

"Out of the eggs produced by hens of the best race, and during the second year of their life, the largest must be taken, because they give, or are presumed to give, the largest and stoutest chickens."

"One must be positive that the eggs are fecundated; too many persons by having put clear eggs to be hatched, have taken a dislike to hatching chickens."

"Therefore, although Harvey affirms that a cock fecundates at one time the eggs that a hen will lay during the whole year; although experience really proves that a mere coupling of the cock and hen made those eggs fruitful that were to be laid during a month; one has the attention to gather those eggs only that are furnished by hens that live with very stout cocks, and to be still more certain of one's point, the eggs of one's own hens are preferred."

"At one time the necessity of renewing the poultry yard requires females; at another, the profit of an advantageous sale makes one wish to have males; it is therefore expedient to know how to distinguish the eggs whence will arise both the one and the other."

"Formerly, pointed eggs were chosen for having cocks, and rounded ones for having hens; but now they are known by more certain signs; the eggs are examined by candle-light, if at one end you observe a small vacancy under the shell, and that this vacancy be exactly at the top of the egg; it contains the sperm of a male; if it is a little on one side, it is a female."

"Eggs thus chosen and selected as fast as they are taken out of the nest, are put, without shaking them in the least, in a basket, insulating them with saw-dust; this basket is hung up in the air, in a dry, cool, dark place, till the end of the laying, till the time for setting."

"The place appointed for setting must be dry, warm, clean, and to the south; it must be closed, and so laid out that the setters may enjoy the greatest tranquillity, that no noise may disturb them; that the cocks and other hens come not to interrupt them. It must be supplied with as many baskets as setters are wanted; in these baskets, of a suitable height and diameter, nests are arranged which are made with fresh straw; they are made concave, and the bottom is covered with feathers."

The "cares to take, rules to observe, remarks to make during the setting," are generally so excellent, that we will not abridge them.

"The hens, the eggs, the place, being thus settled for laying—

"1st. The eggs are again examined, taking them carefully out of the basket in which they had been put by as fast as they were taken out of the nests; taking care that the oldest are not more than three weeks old; they are ascertained not to be damaged by a too great evaporation, when they are still heavy enough to sink to the bottom of the water. In truth, some experiments have proved, that eggs six weeks or two months old could be successfully hatched, but it is not prudent to trust to them. Besides other experiments have clearly shewn, that the freshest eggs were the easiest to hatch, and produced the strongest and stoutest chickens.

"2d. The number of eggs given to each setter varies according to their size, according to the compass of the hen's wing, and again, according to the temperature of the weather. Towards the close of winter less is given to them than in summer, in order that they may cover them more closely, defend them more exactly from the cold which is prevalent at that time. Therefore, a hen to which ten or twelve eggs only would be given in February, might set over fourteen or fifteen in March, and as many as eighteen in April.

"3d. It was formerly prescribed to begin setting at the close of the full of the moon only, to put the eggs always in odd numbers; to preserve them from thunder by arming the nests with old iron; to preserve them from foul air with aromatic plants; but we are now sensible of the absurdity of such trifling niceties, and the farmer's wives are hereby requested to notice them no more.

4th. Spring and autumn are the most seasonable times for putting hens to set; the temperature is then more suitable; eggs are in greater abundance, better conditioned, the hens more heated.

"If, however, one wanted to hatch chickens in winter, the same hens should be used, as would have been cooped up during that season in a warm place, in order to obtain eggs from them by a more substantial food than usual. A fancy to set should be given them by warming them with mustard-seed, with wine sops, leaves and seeds of nettles dried and powdered. If this regimen would not do, one must have recourse to the same process by which turkey-hens are induced to set during the winter, they are fed with wine sops and sugar, they are wrapped up so that their head and tail only may be loose; they are kept on stale eggs for two or three days; at the end of that time, on being set free, they consent to set over good eggs which are substituted to the bad ones.

"These winter-broods are, in fact, not much used, doubtless because it is known by experience that they did not always answer so often nor so constantly as the others; but if the first spring broods are already much more lucrative than the second, on account of the dearth of poultry at that time, what profit would not accrue from the winter ones? And is it not evident that one would be amply indemnified for the extra expense they would require, by risking a greater number of eggs to have the same number of chickens.

"5th. The eggs of different hens must not be put together, neither at different times the eggs of hens of the same species, because they do not

hatch at once, and because the hen leaves in the nest those that are last, to lead the chickens that are come out of their shell.

"6th. Reaumur has imagined the varnishing of eggs, with a view of being able to hatch them more than six weeks after having been laid; but this method must not be resorted to, at least for fowl's eggs, because it is difficult to take off the varnish, and because experience has not shown in the most unobjectionable manner, that this varnish, which remedies very well the evaporation of the moisture of the egg's liquors, is the safest preservative of the sperm. Besides, new laid eggs are easily got at.

"7th. The eggs, once under the hen, must never after be touched; to her must be left the care of turning them about as she thinks proper, to bring those on the circumference to the centre, and those in the centre to the circumference, in order to warm them all equally alike.

"A hen knows much better how to manage this business than the most intelligent keeper.

"8th. It sometimes happens that a setter is impatient, that she often wants to get out of her nest; as soon as this is perceived, one half of the quantity of food which usually forms her meal must be curtailed, when she has eat it, she is replaced, half full, on her eggs, and a little hemp-seed, barley, or millet is held out to her in the hand. This supplement to her meal has the best effect; she gets used to it; she then remains on the eggs as voluntarily as the other females, which wait for the aliments that the males would bring them. To accomplish without doubt the same end, certain keepers put the food so near the nests, that the setters may make their meal without being obliged to leave their eggs; but this method considered in general is improper, because it is ascertained that hens must have a little exercise, take the air, and that it is beneficial for the eggs that the air in which they are involved should be renewed from time to time.

"9th. There are some setters that eat their eggs, or break them; this is the way to cure them of this fault:—

"An egg is boiled hard, it is then bored in several holes; it is handed to the hen, she pecks it like the others and burns herself; then by the same reason that a scalded cat fears cold water, so will she not take it any more in her head to attack even cold eggs.

"10th. It is more advantageous to put several hens to set the same day, so that, should an accident happen to one of the setters, it may be remedied by giving up to another the eggs that are to be hatched, which is done by slipping them under her, being careful not to give her more than she is able to warm.

"11th. To procure a greater number of hens, and preserve the hen's ability of laying, they are replaced for the setting by turkey-hens, which are uncommonly well calculated for this operation, and which are able to set over from twenty five to thirty common fowl's eggs.

"12th. There are some people, who on the eleventh or twelfth day of incubation examine the eggs in the following manner:—

"They have a drum, they put it in the sun, they place the eggs on it one after the other; if their shade wavers by the motion of the chick, they put them back in the nest, and throw away those in which no motion is perceived.

"13th. Many people, after eighteen days incubation, dip the eggs in hot water, under a pretence of softening their shells; 'tis a bad custom, which only disturbs the operation, and sometimes makes it fail entirely. However important, for the good success of the setting, the precepts and observations we have just laid down, experience proves that nature, left to her own means, can, without any inconvenience, neglect them.

"The love of liberty, the fancy of stealing nests abroad and their young ones from the eyes and search of their enemies, that instinct which brings back hens to their primitive state when they are about to fulfil the important functions nature has entrusted them with, sometimes induce them to go, and lay, and set in a bye-place. They return back to the farm-yard in

triumph, with a set of little chickens, often in better health than those which are indebted for their existence to combined cares, a select setter, and an intelligent keeper. Some hens have been seen to go and build their nests in a park, lay there, set there, settle themselves there with their families, become wild, clothed with a greater quantity of feathers, not lay so often, have a less tender but sweeter flesh, remain faithful to their mates till the death of the latter, give themselves up afterwards to pheasants, and give birth to mules.

(*To be continued.*)

SELECTIONS.

ART. I.—*Observations on the Making, Curing, and Casking of Butter.*

[FROM THE TRANSACTIONS OF THE HIGHLAND SOCIETY.]

Drawn up by order of the Agricultural Association, as the result of inquiries into the practice adopted in Ireland, and of the experience of some extensive curers in the county of Aberdeen.

1st. The milk house or dairy should have no internal communication with any other building. It must be kept free from smoke, well aired, and no potatoes, fish, onions, cheese, or any thing likely to impart a strong or bad smell, should be kept therein. In short, nothing but the dairy utensils, which must be kept sweet and clean.

2d. The milk when brought in from the cows, should be strained through a fine hair seive or strainer, and, when cool, put into sweet well seasoned oaken cogs, kellers, or milk-pans—the latter to be preferred. A tin skimmer, with holes in it, is the best for taking off the cream, which should always be churned while the cream is fresh.

3d. The churns, whether pump or barrel, should be made of the best well seasoned white oak—and, as cleanliness is of the first importance, great attention should be paid to the washing, drying and airing of the churns immediately after use, otherwise they are sure to contract a sour and unwholesome smell, which must injure the quality of the butter.

4th. The butter *immediately after being churned*, should be thrown into fresh *spring water*, where it should remain for one hour at least, that it may grow *firm*; and, at the end of the third or fourth washing, some fine salt should be put into the water, which will raise the colour of the butter, and purge away any

milk that remains among it. Before salting, it is very essential that no milk or water be left, otherwise a strong smell and unpleasant taste will be the certain consequence.

5th. The butter thus prepared should be *immediately salted*. The proportions of salt may be from one and one-fourth to one and one-half ounce of Scotch salt for the pound of butter—or, for the best stoved rock or bay salt one ounce for the pound. But when butter is not intended to be kept through the winter and spring, or for any long period, the quantities of salt above recommended may be somewhat reduced, the curer exercising his own judgment in doing so.

N. B.—In Ireland, the use of salt and saltpetre is recommended, in proportions of one ounce of stoved rock or bay salt, and one-fifth of an ounce of saltpetre to the Aberdeen pound.*

6th. It is a very injurious practice to keep a making of butter uncured to the next churning, for the purpose of mixing the two together. This mode invariably injures the flavour of the whole, and renders it of too soft a quality ever afterwards to get firm. This applies to curers who are the producers of the butter—but as the greatest quantity of butter in this country is collected and cured by merchants, they are particularly cautioned against the practice of throwing the fresh butter together, and retaining it in that state for days, until they have collected what they consider a sufficient quantity to commence curing—the butter treated in that manner is invariably found inferior to what is salted after churning. Should, however, there not be a sufficient quantity collected in one day to fill a package when cured, the quality of the butter may in a great measure be preserved by giving it a partial salting and covering it over with a clean linen cloth dipped in pickle, and placing it in a cool situation. Country dealers who are in the habit of sending carts through the districts where they reside, to collect the butter should endeavour to arrange it so between themselves and the makers of the butter, that it is churned upon the day it is called for.

7th. When the butter is cured, it should be tramped firm into the firkin with a round, wooden tramp-stick, of sufficient weight and thickness. The firkin should be filled up to the crose, and then covered over with a little of the purest salt—sufficient room merely left for the head of the cask, and must be well secured, to exclude air, and to prevent the pickle from getting out.

8th. The Liverpool stoved salt, or Portugal St. Ubes, or Bay salt, is from strength and quality always to be preferred. All salt must be kept quite dry, and at a distance from fire, to prevent the first imbibing the smell of the smoke. If put in a cask, a little unslacked lime placed under it will prevent it from drawing moisture from the ground.

* All these calculations are made for the Aberdeen butter pound of 28 ounces avoirdupoise, and the salt of 16 ounces to the pound of same weight.

9th. The mixing of the salt with the butter should be done in wooden dishes, after the water and milk are completely expelled, and no time should then be lost in tramping it into the firkin which will make it draw even and firm.

10th. The milk of new calved cows should never be set for butter until at least four days after the calving, as a small quantity of beast-milk butter will injure a whole firkin. The practice of scalding cream in cold weather should also be avoided, as cream thus treated will never make good butter.

11th. Great care should be taken not to steep the firkin in boggy or unwholesome water. Nothing but the purest spring or clear running water should be used for that purpose—and the firkins should be rendered perfectly dry inside after being steeped, either by long dripping, or being rubbed by a smooth towel. Old butter should never be mixed with new—and the lining of the casks with inferior sorts, or grease butter, is a practice which cannot be too much reprobated.

12. The casks ought to be made of the best oak or ash, (the former to be preferred,) and the largest size should not exceed 84 lbs. gross, that being the size used in Ireland, and most convenient and saleable in the London market. The casks should be tight and well hooped. Beech, plane, ash, &c. should never be used, as that quality of wood is more apt to absorb the pickle, and, independent of the injury thereby occasioned to the butter, it will often lead to dispute about the tare.

ART. II.—*Hints on Pruning; by J. BUEL.*

[FROM THE NEW-YORK FARMER.]

The principal objects of pruning, are to procure a good bole or trunk for timber; to form a proper head for the production of fruit; and to subserve the purposes of ornament.

To effect these objects, with the least trouble and greatest advantage, upon all *non-resinous trees*, the following rules are recommended.

1st. Begin to prune the tree when it is young.

2d. Cut close and smooth to the bole or limb.

3d. Cut, when small, the branches which are likely to interfere, or become useless, and which, if suffered to remain, will require to be removed at a more advanced period of growth.

4th. Do not trim to excess. Let the branches occupy, at least, a third of the entire height of a tree.

5th. Do not prune when the tree bleeds.

Where the preceding suggestions are observed, we may add—

6th. Prune in summer.

I proceed to offer my reasons for the rules here recommended, and,

First. The food required to nourish the lateral useless branches, will go to increase the diameter and height of the plant, or swell the fruit, if these are judiciously removed. But a main consideration is, that the excision of small branches causes only small wounds, and small wounds speedily heal. The observance of this rule, therefore, facilitates growth, promotes health, and ultimately saves labour.

Secondly. This rule needs very little argument to enforce its propriety, as every observer must have frequently seen and lamented the ruinous effects of an opposite practice. The snags either send out useless spray, or, deprived of the feeble aid of these, they die and rot, and carry disease into the bole, and are thus often the cause of the premature loss of the entire tree. If cut close, the enlargement of the living wood soon covers the wound. In large branches, where the saw must be used, the healing process is greatly facilitated; by peeling the cut, particularly the exterior edges, with the pruning knife; and it is a good precaution, before you use the saw, to notch under the intended cut, to prevent tearing the bark when the limb falls. In extirpating sprouts from the roots, and neither they nor those growing from the bole, should be suffered long to remain, the like precaution of cutting close should be observed; for which purpose it is necessary first to remove the earth from about the collar, with the spade or other instrument.

Thirdly. The reasons for pruning a tree while young, apply here: It is easier to cut small than large limbs, and the wounds of the former soonest heal. But the question presents, what limbs are to be cut? Generally all that are likely to cross each other, all feeble spray, the strongest on the bole, and the weakest in the top; for while the trees are in nursery, I think it serviceable to leave a few scattering laterals upon the bole, and it is beneficial, at all ages, to thin most kinds in the top. Yet the answer to the inquiry will depend principally upon the species of tree, and the design of the planter. If his object be timber, the leading shoot should be feathered up in a spiral form, and all other shoots likely to interfere with its growth be cut away. If the object be fruit, beauty and utility are to be consulted, and these are seldom incompatible in the eyes of a fruit grower, for with him productiveness constitutes beauty. If ornament be the main consideration, no special directions can be given, as the species employed, the location, and the taste and fancy of the planter, will have a controlling influence. The rule for timber trees will not apply to either those destined for fruit or ornament.

In orchard and garden fruit generally, the endeavour should be to obtain a low and spreading top. When a clean hole is obtained to a sufficient height, say in the orchard, of seven or eight feet, and in the garden, according to fancy, the leading shoot should be cut in, and three or more arms or branches left to form the head; which, when the habit of the tree will permit it, should be pruned so as to give it a besom form, or that of a broom divested of its centre. Several advantages arise from this and a more expanded form. It admits the air and sun more freely, to mature the fruit and wood; it renders the tree less liable to be blown down; it facilitates the gathering of the fruit, and the pruning of the tree. But the principal advantage consists in its tendency to increase oviparous or fruit buds, and consequently to augment the fruit. A great growth of wood seems to be incompatible with a great crop of fruit, and vice versa. A cow which gives much milk seldom takes on much flesh during the milking season. If the secreted food is converted into milk and fruit, there can be but little reasonable hope of its adding to the flesh of the animal, or the wood of the vegetable. Erect branches produce most wood buds, horizontal branches the most fruit buds. Straight limbs produce less fruit than those that are curved or crooked. Whatever retards or diminishes the flow of elaborated sap, in a healthy tree, is favourable to the production of fruit. Hence wall trees, whose limbs are trained in the form of a fan, or in a horizontal direction, fruit better than those that grow upright as standards. Hence young trees are more apt to show blossoms the first and second year after transplanting, than in the two subsequent years. Pomologists have endeavoured to render this law of vegetation subservient to their interests, by adopting artificial means for inducing the production of fruit buds. These means consist in ring-barking, transplanting, cutting the roots, training, pruning, &c. The pears in the Caledonian Horticultural Garden, are trained *en quenouille*, that is, the lateral branches are cut in to a short distance of the main stem, and kept so, and the fruit is produced on the spurs growing from these shortened branches. In the Horticultural Garden of London, the limbs of the pear are tied down in a drooping position, resembling somewhat in appearance the weeping willow. The vines cultivated at Thomery, celebrated for their superior fruit, are planted eighteen inches apart, trained in the form of a T, the top horizontally, and restricted in their growth to four feet from the main stem. In this way a treillage of eight feet long, and eight feet high, is sufficient for five vines, which produce upon an average 320 bunches of fruit. These modes of training have a common object, that of restricting the growth of wood, and producing an increase of fruit. Those who wish to examine the modes of training here spoken of, in detail, are referred to Loudon's Gardener's Magazine.

Fourthly. Leaves are as necessary in the economy of vegetation as roots. The sap must be elaborated in these before it can be transmuted into wood, bark or fruit. A tree cannot thrive therefore, when these organs are either deficient or diseased. If sufficient leaves or branches to produce them, are not left to concoct, or digest, the sap, which is propelled from the roots, the tree, to use a modern term, but a just comparison, becomes dyspeptic, the vegetable blood is vitiated, the wood loses its texture, and a stunted growth, or premature death, generally ensues. Hence great precaution should be used against excessive pruning.

Fifthly. To prune when the tree bleeds, tends to debilitate, by wasting what is designed as food for the tree. I have known it fatal to the vine. What is termed bleeding, is the flowing of the sap from wounds before it has been converted into aliment. This sap flows most freely while the buds are swelling, and until the leaves are fully capable of discharging their office, as is strongly instanced in the maple, birch, &c. Our orchards are generally pruned in March, which is probably the most unfavourable month in the year for this operation.

Sixthly. The advantages of summer pruning are, that the tree being then in vigorous growth, the wounds heal speedily; and the sap being concocted and thick, does not flow from the wounds, and thereby impair the health of the plant. Summer pruning should not be performed, however, before July, when the new growth has considerably advanced. It may be well to add, as this suggestion may seem unsound, that summer pruning is recommended by the best authorities. "As a general rule," says Pontey, "summer is preferable to winter pruning;" and Sang suspends pruning "from the beginning of February to the middle of July, but carries it on during every other month of the year."*

In regard to evergreens, which with us are confined principally to resinous trees, it is the general practice of nurserymen, and I think it a judicious one, not to prune them till they have acquired some year's growth, and then but sparingly and at long intervals, displacing two or three tiers of the lower branches every two or three years. Monteith says, "never cut off a branch till it has begun to rot, as the bleeding of a live branch will go far to kill the tree."

The implements employed in pruning, and the manner of using them, are matters of moment. If the operation is com-

*The Gardener's Magazine for October. has a communication from John Bowers, recommending summer as having a decided preference. The growth of trees thus pruned, he says, far exceeds that of the winter pruned. He commenced the practice in 1826, when his trees were six feet high; and in the autumn of 1829 they were 20 feet. He has this year summer-pruned 100 acres of young plantations, which in August were stated to be remarkably thriving and healthy.

menced when the tree is young, and judiciously followed up, a good knife, a small saw, and a chisel fixed on a six foot handle, to trim the tops and extremities of the branches, are all the tools that are required. A large saw will be occasionally wanted; but an axe or hatchet, should never be employed, as they fracture the wood, bruise and tear the bark and disfigure the tree.

J. BUEL.

Albany, Dec. 1830.

ART. III.—*Employment of Children Collecting Manure.*

[FROM THE AMERICAN FARMER.]

THE employment of children in gathering manure, would be well compensated, and it is recommended to the attention of agriculturists. In our travels through the Southern States we have often wondered that the swarms of slave children we saw playing about the cabins were not thus employed. Every child might annually save manure enough from the roads, avenues, and fields, were it is not wanted, to pay for its support, and this is no mean object with those who have a large number to maintain. There should be two places of deposit for manure, one for dung of different kinds, and the other for every description of vegetable substance. The dung-pen should be concave, with a clay bottom, if possible, to receive and retain the washings, and covered with a shed roof. Into this pen every kind of dung should be thrown fresh; and it should be the constant business of such children and superannuated persons as cannot be better employed, to collect from the roads and other places, all the dung they can find and convey it to the pen. The blood and offals of all animals slaughtered on the farm, should also be carefully saved and buried in the dung in this pen. Few persons have any idea how much nutritive matter they throw away in the blood of a slaughtered pig or lamb. Every description of small dead animals should also be buried in one side of this pen by laying it on the top of the ground and covering it six or eight inches deep with earth, till it is decomposed, when the remains with the covering of earth should be thrown upon the dung heap and mixed with it—the carcasses of horses and other large animals should be covered up in the same manner at a distance from the dwelling. and when properly decomposed, the pile of earth covering it may be taken and spread immediately upon the field—on opening the pile the offensive smell may be corrected by a sprinkling of unslacked lime.

The place for depositing vegetable substances may be similar to the dung-pen, except in the roof, which will be unnecessary. To this place all weeds found growing by the road sides, fences, in the yards, garden and fields, and those dug up in the process of cultivation, should be carried in a green state. Small brush and leaves, shavings, old rags, straw, litter, house, yard and barn sweepings—in fact every thing of the vegetable kind, capable of being decomposed in a reasonable time, and which is of no value for other purposes, should be daily collected and conveyed to this pen. Once a week, or as often as any considerable addition shall be made to the pile, a thin covering of earth—if sandy the better—should be thrown on, and the pile trod down to make it compact, and to absorb the nutritive salts that may be evaporated.

We are well aware that this will be considered a small business, by many of our large scale agriculturists; some of those who look for their hundred bales of cotton, or their ten thousand bushels of wheat at each harvesting; but they must consider that their bales of cotton and their bushels of wheat, are made up of the contributions of equally small things—single bales and single heads; and that even these cannot make their contributions without the nourishment afforded by these little particles of manure. Others who have naturally rich soils, will deem such a system unworthy of their attention—rich soils are like rich inheritances, they are not inexhaustible; and we might as well expect the one as the other to remain unimpoverished by a perpetual wasting of its substance. We have seen farmers who pursued such a system, and we never saw one of these who was not “well off in the world.” With them, there is neither man nor woman nor child, (infants of course excepted,) old or young, that had not some useful employment; and all who could do nothing better were engaged in gathering manure as above. The farm yards, &c. of such, are always clean and neat—they would as soon think of allowing their bread and meat to be wasted, as any thing which can be made into manure. Visit their barn-yards, and you will never be swamped in the mud and mire; their smoke-house is always well stored, their cribs full, and their purses well lined. One or two other peculiarities invariably mark such managers—the horse of a sheriff’s officer is never seen hitched to their gate-posts; their names are never seen in sheriff’s sale advertisements.

We feel assured, that if a philosophic view were taken of this subject by farmers, no argument would be necessary to induce them to enter into the system. The soil contains a certain quantity of matter, which is the food of vegetables, and it is absolutely incapable of obtaining more by its own means. If this vegetable food is continually taken from it, and none returned to it, it must, as a matter of course, soon be exhausted, and become

barren. It would therefore be as unreasonable to expect good successive crops from a soil to which no manure is ever carried, as it would be to look to a crib which is never replenished, for a continual supply of grain. The soil, like a full corn crib, can furnish no more than its first contents, without being replenished. The conclusion is obvious—as we would gather all the harvest and save the crop carefully—as we would studiously avoid wasting the bread from which we derive our nourishment—so should we gather and carefully save every thing that can be made into manure, the nourishment of the soil.

ART. IV.—Uses of Rhubarb.

The rhubarb plant has been cultivated for many years in Europe, and more especially in England, for its stalks, which is used for tarts, &c. It is of later introduction in the United States; but in the Northern States it is rising rapidly in estimation, and its culture of course corresponds. In such demand is it in London, that it is sent in by large wagon loads, to the markets there. It would be gratifying to us if we could be the means of bringing it into use in the Southern States; and having received a supply of several varieties (all used for this purpose) we offer to furnish any of our friends with seeds; and to enable them to cultivate it we have selected the following directions from Thornburn's Catalogue, which will for the present answer our purpose.

*“Rhubarb, for tarts—*Most of the known species of this plant are of Asiatic origin, but the two which alone enter into the food of man, (the *rheum reponticum* and *undulatum*,) are natives of Thrace and Russia. The stalks, which are the parts used for culinary purposes, grow to the length of twenty-four inches, and acquire the thickness of a lady's finger. Stripped of their outer covering, they yield a substance slightly acid,* which is much admired, and employed as an ingredient in the composition of puddings and tarts. Cobbett supposes, that a hundred wagon loads of these stalks are annually sold in the markets of London, at a shilling sterling per bunch.†

* The stalks, like the roots, yield, on analysis, sulphur and lime.

† American Gardener.

The following is the mode of its culture;—select a piece of light, rich, sandy loam, such as answers for asparagus, and after giving it a good coat of manure, trench it two or three spades deep, if the good soil admits; alter which level the top neatly, and lay it out by line, into squares of four feet, at the angles or intersections of which, you are to form little circles with your finger, about six or eight inches in diameter, and on each, scatter a few seeds, then cover them with light fine mould three quarters of an inch deep. The seeds should be sown as early in the spring as possible, (or if done in November, they would vegetate in spring with more certainty;) when the young plants appear, keep them free from weeds, and in dry weather give them frequently a little water, but not much at a time; and above all things protect them from the mid-day sun, till they get considerably strong, for if exposed fully to this during their infant state, but few of them would escape destruction thereby. Were you to place a piece of board on end, about fifteen inches broad and two feet and a half high, at the south side of each hill, leaning a little over the plants, this would answer the end effectually, without depriving them of the benefit of the circulating air. The first season is their critical period; having survived that, they have nothing to fear afterwards. Onions, lettuces, or any other low growing crops, may be either sown or planted in the intervals, for the first year, so that they are kept at a proper distance from the young plants. The supernumerary plants (one being sufficient to be left in each of the places for ultimate perfection) may be transplanted the spring following, into new plantations similarly prepared, and at the same distance.

The November following, all the leaves being then decayed, cover the crowns of the plants two inches deep with earth from the intervals, and if there is danger of any wet lodging, throw up trenches, rounding the beds as is commonly done to asparagus, and for the first winter, lay some dry litter over the plants. In the March following, strip the covering till you perceive the tops of the plants, give all the ground a slight digging, and dress it neatly, observing to keep the beds well hoed, and always free from weeds.

It is important to be very particular in the choice of ground, particularly that it is not subject to lodge wet, for this plant by no means agrees with too much moisture; preferring a rich, dry, sandy loam, to any other kind of soil.

Rhubarb may also be propagated by offsets from the old roots, or by sowing the seed in seed-beds, and transplanting them when a year old into such beds, and at the same distances as before directed for sowing the seed; but they always produce larger and better roots, when sown where they are to remain.

The beginning of April is the best time to propagate this plant by offsets from the root.”—*Thornburn's Catalogue*.

That our readers may know the various uses made of it, we select from the *Gardener's Magazine* an account of the modes of preparing it.

"I need not appeal to the experience of others for its delicious flavour, but I can, from long attention, pronounce it to be equal to the choicest of our fruits in its effects on the human frame during the sultry months of the summer, being cooling, and slightly cathartic. I cannot recommend a more palatable or wholesome article, and more especially if taken cold in hot weather, than the pies we use in our family. With a little yeast put into the crust, we have it light and porous, about an inch or an inch and a half thick. This I believe to be the only kind of pastry that is good for the stomach, and decidedly so for that of an invalid; and there are few constitutions so feeble or delicate, but what may freely partake of it without any fear of bilious consequences, or of any flatulence or indigestion. It continues its produce in the gardens from the beginning of May to the end of August, and has another great advantage, that it will make an excellent preserve for the winter. It should not, however, be suffered to grow too old before it is cut; like every other vegetable there is a point in its age when it is at its highest perfection. We cut it into squares, put it on a pan in single layers, and then place it in an oven so moderate in its heat, as to require about twelve hours for the process; it should have a very small portion of its moisture left; and then we put it into wide-mouthed bottles, with about a fifth or a sixth part of its weight of brown sugar. If, in the course of a day or two, the dissolving of the sugar produces a small supply of liquid, the quantity of moisture is right, and by frequently shaking the bottle for a week or two, the article will be good for use, till the gardens give their next supply. The bottles should be covered with bladder.

"I had supposed from the great quantity of liquid contained in rhubarb stalks, that it might supply a new cider, but find, on trial, that it contains so little of any saccharine matter, that it will not ferment. I, however, made some wine from the juice without any water, and have a few bottles left of ten years' vintage, and it is really very good; but, like all the home-made wines, it is neither more nor less than sugar wine, seasoned with the flavour which gives the name.

"JAMES LUCKCOCK.

"*Edgbaston, near Birmingham, July 23, 1827.*"

ART. V.—*Management of Gullies.*

[FROM THE VIRGINIAN.]

Our fields are full of gullies ; yet nobody seems to care. 'Tis true, that some few persons attempt to stop them, but it has been very seldom that I have seen one filled, or permanently stopped from washing.

Some persons make a stone wall across a gully, which, although they may stop some earth, yet they answer no good purpose ; for in falling over the dams, the water cuts up the earth, and the gully continues to wash, until the earth becomes level with the dam : and although the dams may stand ten or twenty years, yet when they are removed, the gully will again wash, as a portion thereof is yet a dead clay.

Again, I have seen stakes and wattlings across gullies ; which are no better, if as good as stone.

By spreading manure and ploughing deep, a small gully may be stopped ; but a gully of magnitude cannot be stopped without brush. The brush should be large, (in fact a small tree is best in a large gully ;) the lap should be turned upward the gully, and the limbs which may be elevated should be cut down. An ever-green of the resinous species is always preferable, as such contains the greatest quantity of nutritive matter, and will the better hold the drifted earth, and floating matter ; but if such cannot be had, then oak or any other will answer.

After, by this and other means, a gully has been made rich, plough it down, plough it deep and cultivate horizontally, and it is safe ; for to keep land from washing, it is necessary, and all that is necessary, to spread the proper manures and plough deep, so that rains may sink as fast as they fall.

The great misfortunes attending gullied lands, are, 1st, they have not the capacity of clothing themselves, even when out of cultivation, and therefore they wash the deeper at every rain—2d, not only so much surface is lost as is contained in the gully, but a turn row must be had on either side—3d, the dead clay therefrom is deposited in better ground, to its damage ; and other misfortunes of minor consideration might be enumerated.

I have cast stone in the bottom of deep gullies, but stone was intended for better purposes.

Z. DRUMMOND.

January 1, 1831.

PART III.

MISCELLANEOUS INTELLIGENCE.

Seed Rice.—PEE DEE, 10TH FEB. 1831.—Several rice planters, residents of Georgetown District, agreed, during the last summer, to exhibit, each, twenty bushels of seed rice, as a sample of the product of a field of not less than ten acres; on condition that the *whole* should be yielded to him whose rice should be adjudged the purest and best seed.

Gen. Jos. W. Allston, Col. Josh. I. Ward, Col. R. F. W. Allston, Dr. E. T. Heriot, and Mr. Benjamin Tucker, were included in this arrangement, which, it was understood, was to continue five years.

This exhibition took place at Pee Dee this day. Samples from the three gentlemen first above named, were alone produced. We took from six different parts of each distinct parcel, a wine glass even full—the six glasses containing about 5,178 grains—this was thoroughly hulled, and the red grains carefully picked out and laid by. The least quantity of red found was in the six glasses from Col. R. F. W. Allston's parcel, being *eight grains*. We therefore adjudged him to be entitled to the prize.

(Signed) DAVISON McDOWELL.

J. H. ALLSTON.

[*Winyaw Intelligencer.*]

Notice of the Cattle Farm near Charleston; by Jos. F. O'HEAR.—*Cattle Farm, 29th Jan 1831*—Dear Sir,—Having prepared the pens for the reception of stock of all description, on the cattle farm, under my immediate care. I think it probable that you may like to give publicity to the fact, through your useful and extensively circulated periodical, having hitherto displayed much zeal in the public weal. I therefore take the liberty of making this communication. Your acquaintance with the objects embraced in the plan of the establishment, will enable you to notice it in proper form. I would simply remark, that the pens are substantial and convenient, having the advantage separately, of being supplied with water, and having some covered stalls in each division, where drovers may put up their horses and any stock they may wish to shelter. The accommodations are offered free of charge, for the present. Fodder and grain may be had on the farm, as low priced as they can be purchased in the neighbourhood of the city—from which it is only removed one mile, and not two from the market. The farm is immediately situated at the fork of the two roads leading into the city, and is designated by a sign over the gate, "*Cattle Farm.*" Drovers may obtain information there as to the state of the market.

Very respectfully, yours,

JOS. F. O'HEAR.

In compliance with a memorial from the Agricultural Society of South-Carolina, the legislature of this State appropriated a sum of money for the purchase of a cattle farm—and authorized the society to make the purchase and enact such regulations as they may deem proper. They have accordingly bought one, and have erected on it suitable pens and stalls. The ob-

ject is to afford to drovers a suitable place for keeping their stock, whilst waiting for purchasers. No charge is at present made for the use of these pens and stalls, and more is contemplated to be made hereafter, but such as will barely serve to keep these accommodations in repair. The memorial of the society having been published in this journal, we refer our readers to it for more specific information relative to the cattle farm.—[Editor.

Foddering of Cattle.—When cattle have been accustomed to fodder, they will not make shift with the same food that would have served them, if they had not been brought to the use of this. Therefore it is essential to keep them from it as long as can be done without absolute damage to them; and when it is first given them, to let them only feed partly on that.

When the cattle find great scarcity abroad, if they be offered some of the most indifferent hay, they will feed gladly upon it; but if the farmer begins with the best, they will not readily touch this afterwards. Let it be given a little at a time only, and that when they are sharply hungered. For if he give them a surfeit of it they will never touch it afterwards, even when they are hungry.

Cows will eat straw freely, and thrive very well upon it, unless they be accustomed to hay; but in that case they will refuse the very best straw afterwards; and the farmer must submit to feed them in this expensive manner, or to starve them. He must not expect cows to eat after one another, or that one creature which chews the cud, will eat what another has left; but the leavings are not wasted, for though these will not eat them, the other kinds will. A great deal of caution must be used in regard to the time of turning cattle out of the yard where they have been foddered, into grass; for if there be not a sufficient growth for their support, they will decline very soon. It is a common error to turn them out too early.—*Genesee Farmer.*

Chinese Cow.—An English publication states that “a Chinese cow, now in England, gives milk so very rich, that one pint of it gives as much butter, (4 ounces) as seven pints of a Sussex cow’s milk, both churned immediately from the cow without being set for cream. The Chinese cow is small, and says Mr. Young, “the beef is superior in fatness, and in butter the superiority is as 1400 lbs. to 200 lbs. from a very good country cow.” This is such a superiority in milk and beef, as might make it an object to the owners of American ships to China, to import some of the stock which is native to that country.—*N. E. Farmer.*

Bees.—A few years since, a farmer removed from this county, to one of the northern counties of the state of Ohio; his remove was in the winter, and he took with his other moveables a hive of bees, and at the end of his journey he located in an old log house, and for the want of a better place he put his swarm of bees into the garret, where they remained till spring.

Among the many cares of a remove into the wilderness, he forgot his bees, and neglected to place them out of doors, as is the custom; but with the return of spring, and the opening of the wild flowers of the wilderness, they did not forget their duty, but “gathered honey every day from every opening flower,” until the hive was full to overflowing. They found abundant passage between the logs of the house. When the hive was full, instead of swarming and going off, they merely removed a few feet from the old hive, attached themselves to a log in the same room, and went to work; others attached themselves to the outside of the hive, and continued their operations in open view, in this manner for several years. When the family wanted honey, they went into the room, and broke off what comb they required without molestation. Having abundant room in the garret they never left it in swarms. It is probable that the room was nearly dark, but of this I am not informed. From this circumstance, the inhabitants when they build their houses, finish off a small tight room, in the garret, or other

convenient part of the house, exclusively for the bees, with timbers or braces to which they can attach the comb, having a tight door to the room, to exclude mice, &c. and I understand they are not molested by the bee-moth or miller. I could much enlarge upon this subject, but time does not permit, and it is quite sufficient for a practical man to improve the hint. I am, respectfully, yours,

O. W.

[*Genesee Farmer.*]

Soils.—In affording warmth to plants, the earth is of considerable importance, and the power of accumulating and retaining it varies as much in soils as the proportions of their constituents. Sir Humphry Davy found that a rich black mould, containing one-fourth of vegetable matter, had its temperature increased in an hour from sixty-five to eighty-eight degrees, by exposure to the sunshine, while a chalk soil was heated only to sixty-nine degrees under similar circumstances; but the first, when removed into the shade, cooled in half an hour fifteen degrees, whereas the latter lost only four degrees. This explains why the crops on light-coloured tenacious soils are, in general, so much more backward in spring, but are retained longer in verdure during autumn, than those on black light soils; the latter attain a general warmth the more readily, but part with it with equal speed. An experiment which I have often repeated upon light as well as tenacious soils with like success, demonstrates how greatly the colour of a soil influences the accumulation of heat. Coal ashes were sprinkled over half the surfaces of beds sown with peas, beans, &c. and on these the plants invariably appeared above ground two or three days earlier, obviously on account of the increased warmth; it being a well known fact that dark coloured bodies absorb caloric more readily, and in larger proportions, than those of a lighter hue.—*Arcana of Science.*

Fecundation of Vegetables.—M. Gaertner, a German botanist, has recently been engaged in a multitude of experiments, relative to the sexual system in plants. The following are a few of the facts ascertained:—A microscopic quantity of the pollen proper to a plant being placed upon its pistil, has so great an influence as entirely to destroy the action of a large mass of the pollen of another plant, even though of a very near species: the proper pollen of a plant being applied by means of a pencil to the stigma, becomes so exactly attached to it, that it is difficult to remove it without injuring the stigma: with the pollen of another plant it is quite otherwise; the stigma then appropriates it with difficulty and slowly, and the difficulty increases with the difference between the species. When the fecundation of one plant is occasioned by the pollen of another, the pollen applied to the stigma disappears in a time which, all other circumstances remaining the same, varies as the affinity between the species is more or less. When once the pistil is saturated with fecundating matter, that which is afterwards applied undergoes no change either of form or colour. In natural fecundation, the stigma loses its fulness and freshness as soon as it is saturated with fecundating matter; in the cross fecundation, the stigma remains unchanged for a much longer time, and even sometimes seems to be renewed in vigour. In the latter case, the pollen, which is re-applied, disappears, until the stigma loses its freshness. The foreign pollen retards, rather than accelerates fecundation.—*Ibid.*

Grafting.—Mr. FESSENDEN—In your paper of Dec. 31, a new mode of grafting is described, which is said to be an improvement. I desire also to show you another new mode of performing this operation, which may prove equally valuable.

When trees begin to show their fruit, (no matter what kind,) and it is made evident that grafting must be resorted to, or we must patiently put up with an inferior kind; instead of cutting off the top, uncover the roots and choosing the most thrifty one, make a slit in the bark, cut your scion off

with a slope, and thrust it in and cover the roots with earth. It will take well, and grow some the first year, much more the next, and the third year the old stock may be cut away, and the growth from that time on will be very rapid, and soon form a good bearing tree.

CALVIN.

Preston, Ohio, Jan. 23, 1831.

[*New England Farmer.*]

Sugar of Melons.—The melon has occasionally been thought of as a source of sugar, and its juice submitted to processes calculated to separate that principle from the accompanying but deteriorating matters. M Payen has lately applied analytical processes to the juice of a melon cultivated near Paris, and from 100 parts of the liquid obtained $1\frac{1}{2}$ parts of sugar, perfectly well crystallized in rhomboidal parallelopipeds, and having the taste and other properties of cane-sugar, with which it appeared to be identical.†

[*Arcana of Science.*]

Propagation and early Fruitfulness of the Fig-tree in pots.—The following account of some figs, propagated by cuttings, was lately sent to Mr. Loudon by Mr. John Borrowdale, Wareop Hall, Westmoreland:—

I got six well ripened young shoots, having only about one fourth of an inch of last year's wood, at the bottom of each cutting; I cut them across smoothly and at right angles, and planted them on the 15th of March last, in the smallest pots I had, one in each pot, filling the pots with very light compost, but rich in manure. I then plunged them up to the rim in the pine pit, and they very soon began to grow vigorously. As soon as they had made five and six leaves, I pinched out the leading bud. On the 1st of January I shifted them into pots seven inches deep by six inches wide. On the first of June I took their balls away, as they readily parted, being composed of such light compost; being re-potted they very soon made four and five shoots each, and when these had got as many joints and leaves, I again stopped them. Each plant has now from fifteen to eighteen fruit, which are swelling remarkably well; I have since removed them into pots ten inches deep by nine inches wide, and I also give them plenty of liquid manure. They are standing on a shelf in the pine-stove, and I think they will ripen the present crop by the middle of October, and they are putting out another set of branches, so that I shall probably get a second crop by Christmas. They are the large white Genoa fig.—*Ibid.*

Flowers in water and living plants in pots greatly injure the purity of the air during the night, by giving out large quantities of an air (carbonic acid) similar to that which is separated from the lungs by breathing, which, as is well known, is highly noxious. On this account they should never be kept in bed rooms: there are instances of persons, who have incautiously gone to sleep, in a close room in which there has been a large growing plant, having been found dead in the morning, as effectually suffocated as if there had been a charcoal stove in the room.—*Ibid.*

Sea Kale is getting into repute as an esculent. It may be readily propagated like horseradish. A piece of the root an inch long, placed in a drill, root end downwards, will grow and become a plant. To obtain it of its finest flavour, it should be grown in pure sand, and if the sand is impregnated with salt in situations remote from the sea board, the plant will thrive the better. Sea Kale should be blanched, by covering it with pots, or raising a mound of earth round the plant, as soon as it begins to grow in the spring. It may be forced, like rhubarb, by covering with pots or boxes, and these with recent horse manure; but care must be taken not to give too much heat, which will cause the stems to rot.

J. B.

[*New-England Farmer.*]

† Bull. Philom.